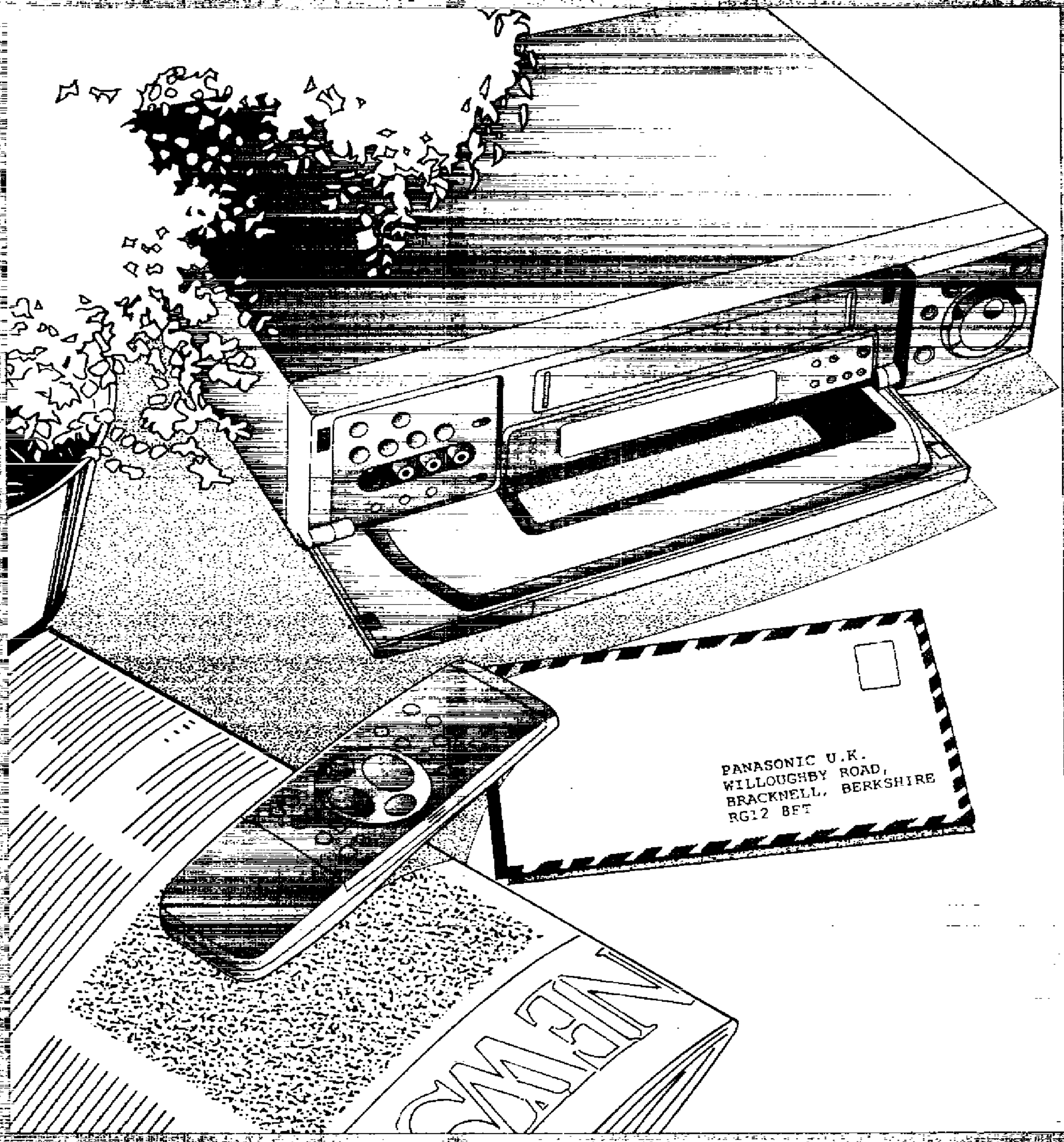
Panasonic

Video Cassette Recorder

NV-HS900

Operating Instructions



VIDEO Plus+

S VHS

VHS
PAL

SUPER DRIVE
MULTI-INTELLIGENT CONTROL

Before attempting to connect, operate or adjust this product, please read these instructions completely.

VJL6611

Dear Customer

May we take this opportunity to thank you for purchasing this Panasonic Video Cassette Recorder.

We would particularly advise that you carefully study the Operating Instructions before attempting to operate the unit and that you note the listed precautions.

Auto Setup

Connect the aerial lead and the mains lead. (See page 12.)

↓

Turn on the VCR.

↓

Auto Setup is finished.

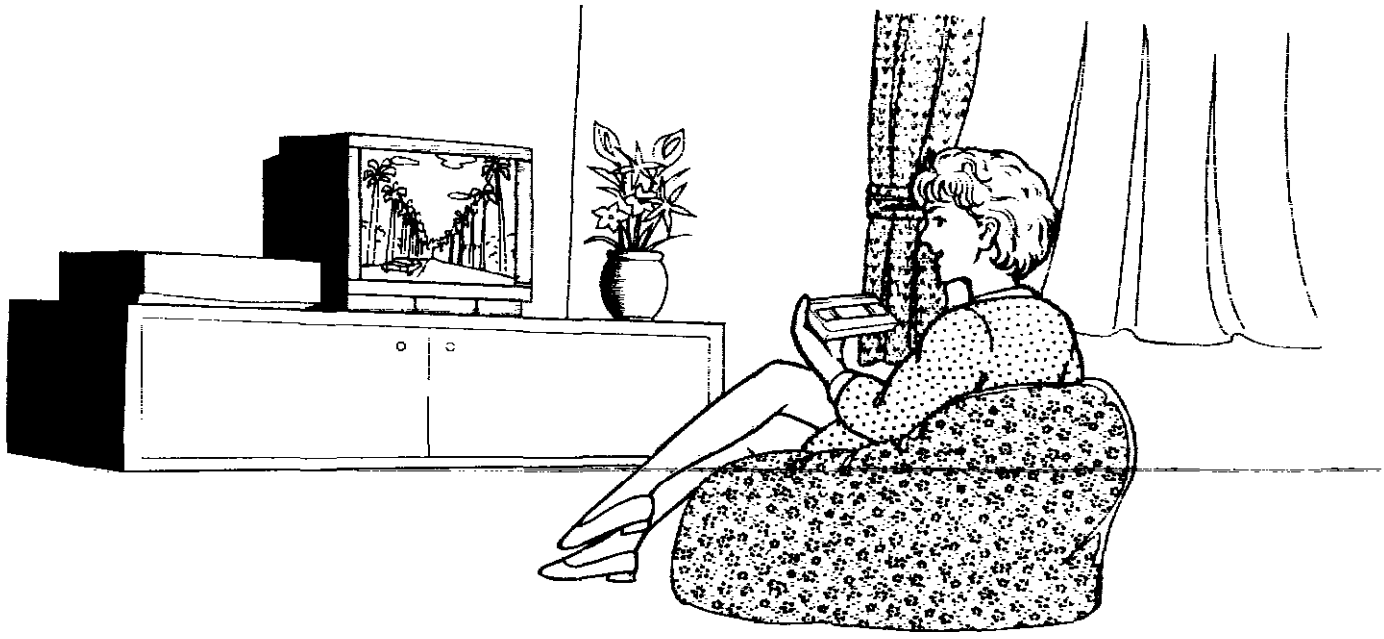
Video Plus+ Programming System

Programming is now easier than ever: simply enter the PlusCode provided in the programme schedule column carried by newspapers and magazines.

- Video Plus+ and PlusCode are trademarks of Gemstar Development Corp. Video Plus+ system is manufactured under license from Gemstar Development Corporation.

Crystal View Control

Introducing Crystal View Control, and innovative new technology for high picture quality. This technology uses a CVC microprocessor to intelligently control the relationship between the tape heads and circuitry, bringing out the maximum performance of each. The result is consistently optimum picture quality.



IMPORTANT

Your attention is drawn to the fact that the recording of pre-recorded tapes or discs or other published or broadcast material may infringe copyright laws.

WARNING

TO REDUCE THE RISK OF FIRE OR SHOCK HAZARD, DO NOT EXPOSE THIS EQUIPMENT TO RAIN OR MOISTURE.

FOR YOUR SAFETY

■ **DO NOT REMOVE OUTER COVER.**
To prevent electric shock, do not remove cover. No user serviceable parts inside. Refer servicing to qualified service personnel.

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Caution for AC Mains Lead

For your safety please read the following text carefully

This appliance is supplied with a moulded three pin mains plug for your safety and convenience.
A 5 amp fuse is fitted in this plug.
Should the fuse need to be replaced please ensure that the replacement fuse has a rating of 5 amps and that it is approved by ASTA or BSI to BS 1362.
Check for the ASTA mark ⟨ASTA⟩ or the BSI mark ⟨BSI⟩ on the body of the fuse.

If the plug contains a removable fuse cover you must ensure that it is refitted when the fuse is replaced.
If you lose the fuse cover the plug must not be used until a replacement cover is obtained.
A replacement fuse cover can be purchased from your local Panasonic Dealer.

IF THE FITTED MOULDED PLUG IS UNSUITABLE FOR THE SOCKET OUTLET IN YOUR HOME THEN THE FUSE SHOULD BE REMOVED AND THE PLUG CUT OFF AND DISPOSED OF SAFELY. THERE IS A DANGER OF SEVERE ELECTRICAL SHOCK IF THE CUT OFF PLUG IS INSERTED INTO ANY 13 AMP SOCKET.

If a new plug is to be fitted please observe the wiring code as shown below.
If in any doubt please consult a qualified electrician.

IMPORTANT

The wires in this mains lead are coloured in accordance with the following code:

Blue:	Neutral
Brown:	Live

As the colours of the wires in the mains lead of this appliance may not correspond with the coloured markings identifying the terminals in your plug, proceed as follows:
The wire which is coloured BLUE must be connected to the terminal in the plug which is marked with the letter N or coloured BLACK.

The wire which is coloured BROWN must be connected to the terminal in the plug which is marked with the letter L or coloured RED.

Under no circumstance should either of these wires be connected to the earth terminal of the three pin plug, marked with the letter E or the Earth Symbol ⏚.

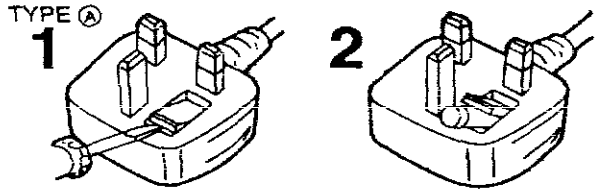
How to replace the Fuse

- There are two types of the AC Mains Lead assembly: Ⓐ and Ⓑ as shown below.

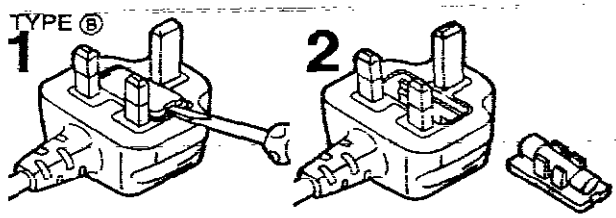
1 Open the fuse compartment with a screwdriver.

2 Replace the fuse and fuse cover.

TYPE Ⓐ

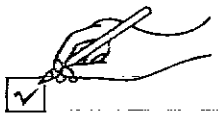


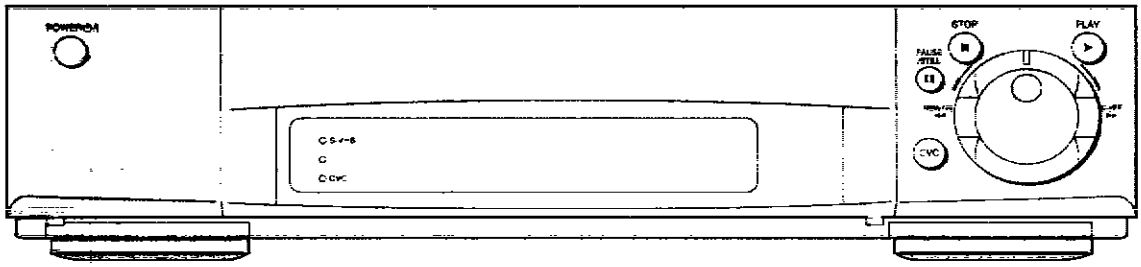
TYPE Ⓑ



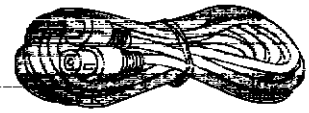
Unpacking

Check and identify the supplied accessories, and then set up this VCR after reading "Setting up".



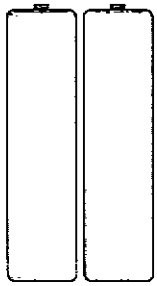


☐ RF coaxial cable for connecting between this VCR and a TV (1 pc.)
VJA0963 or VJA0728-A

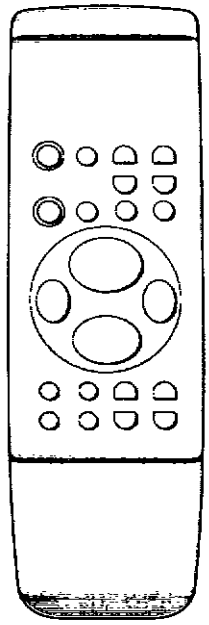


☐ Audio Cable (1 pc.)
VJA0231

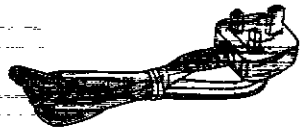
☐ Batteries for the remote controller (2 pcs.)
UM3 or R6 type



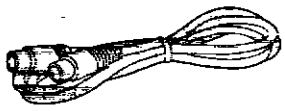
☐ Remote controller (1 pc.)
VEQ1694



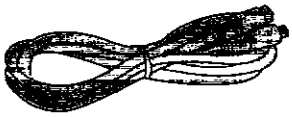
☐ AC mains lead (1 pc.)
VJA0733



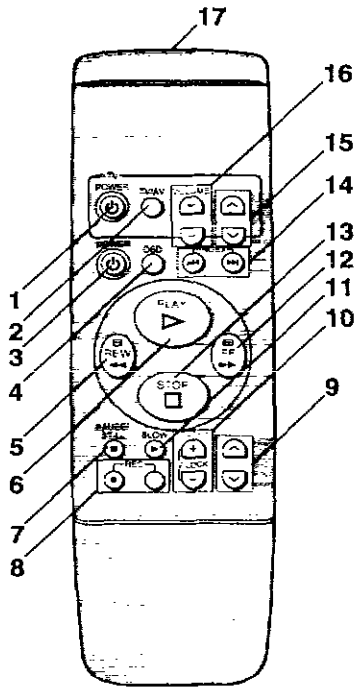
☐ Edit Cable (1 pc.)
VJA0787

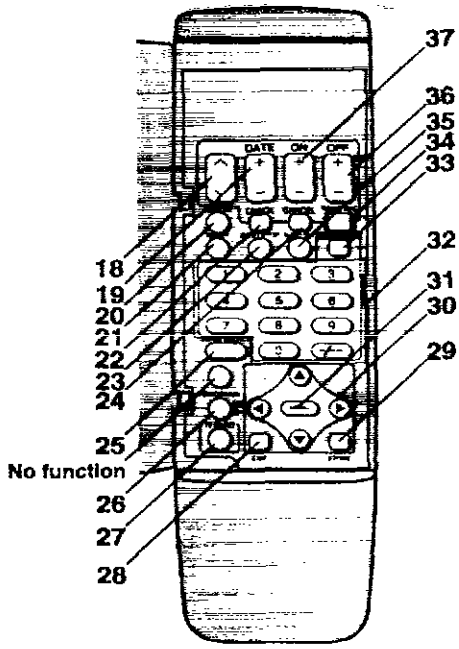


☐ S-Video cable (1 pc.)
VJA0748 or VJA0658



Infra-red Remote Controller





1 POWER (TV)
To switch the TV from on to standby mode or vice versa. In standby mode, the TV is still connected to the mains.
- With some TV models, it may only be possible to switch the TV to standby mode using this button. In this case, use **TV/AV** or ∨ ∧ **(TV)** to switch the TV on.

2 TV/AV
To select the TV input.

3 POWER (VCR)
To switch the VCR from on to standby mode or vice versa. In standby mode, the VCR is still connected to the mains.

4 OSD
For the On Screen Display Function.

5 REW (REWIND)

In the stop mode:	To rewind the tape.
In the playback mode:	To search backward.
In the rewind mode:	To obtain high speed picture.

"◁◁" is lit.

6 PLAY
To start playback. "▷" is lit.

7 PAUSE/STILL
During playback: Still picture.
During recording: To interrupt recording.

8 REC
To start a recording.
- Press both buttons simultaneously.

9 ∨ ∧ (VCR)
To select the required programme position (TV station) of the VCR.

10 TRACKING/V-LOCK
To adjust the tracking and the vertical locking. (See page 19.)

11 SLOW
For the slow motion playback function. "▯▷" is lit.

12 FF (FAST FORWARD)

In the stop mode:	To fast forward the tape.
In the playback mode:	To search forward.
In the fast forward mode:	To obtain high speed picture.

"▷▷" is lit.

13 STOP
To stop any playback or recording.

14 INDEX
For the index search function.

15 ∨ ∧ (TV)
To select the required programme position (TV station) of the TV.

16 VOLUME
To adjust the volume of the TV.

17 Infra-red Transmitter

18 ∨ ∧
To programme a timer recording.

19 DATE
To programme a timer recording.

20 DISPLAY
To change the indication on the VCR Display.
→Clock→Counter→Remaining Tape Time

21 RESET
To reset the tape counter (elapsed time) to "0:00.00".
●The tape counter is automatically reset to "0:00.00" when a video cassette is inserted.

22 CHECK
To check timer programmes.

23 ZERO STOP
For the zero stop function.

24 CANCEL
To cancel the settings made for a timer recording.

25 INPUT SELECT
To select the A1, A2 or A3 external recording source.

26 RECORDING SP/LP
To select the tape speed desired for recording.
SP gives the best picture quality.
LP gives the longest recording time.

27 TV SELECT
To set the remote controller for operation of the TV.

28 EXIT
To make On Screen Display disappear on the TV screen.

29 STORE
To make selections from On Screen Display.

30 ▲ ▼ ◄ ►
To make selections from On Screen Display.

31 MENU
To make On Screen Display **Main Menu** appear on the TV screen.

32 Programme Position Selector Buttons
●To select the programme positions (1–99).

9: (9)

19: (-/--) → (1) → (9)

●To enter a PlusCode.

33 VIDEO PLUS+
For the Video Plus+ programming.

34 TIMER REC
To turn the timer recording function on and off.
⏲ is lit or not lit.
Once operating timer recording function, the normal VCR operation is not possible unless this button is set to off.

35 AUDIO OUT
To select the desired sound mode.
At the every push of this button, the audio output mode changes as follows.

→Stereo→Left→Right→Normal audio track→

The Left (L) and Right (R) Indicators shown which sound mode is selected in the following way.

Stereo: Both the L and R Indicators appear.
Left: The L Indicator appears.
Right: The R Indicator appears.
Normal: Both the L and R Indicators don't appear.

36 OFF
To programme a timer recording.

37 ON
To programme a timer recording.

How to select the remote control mode

This remote controller has two remote control modes VCR1 and VCR2.

Ⓐ Remote control mode VCR1:
Press ▲ while holding **TV SELECT**.
Set to this position on both the VCR and remote controller for normal use with one VCR.

Ⓑ Remote control mode VCR2:
Press ▼ while holding **TV SELECT**.
Set to this position when using two Panasonic VCRs.

Ⓒ When the VCR mode is not known: Point the remote controller at the VCR and proceed with step Ⓐ or Ⓑ. If the mode established matches the VCR mode, the VCR's power supply operates.

Refer to page 39 as well.

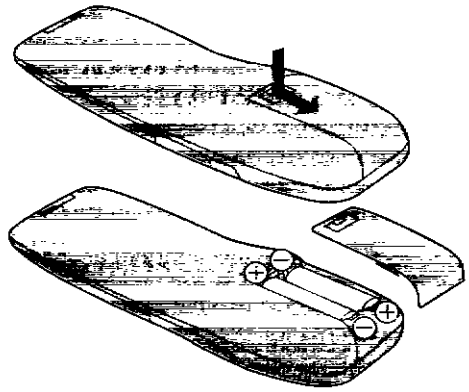
Power Source for the Remote Controller

The remote controller is powered by 2 "AA", "UM3" or "R6" size batteries. The life of the batteries is about one year, although this depends on the frequency of use.

Precautions for Battery Replacement

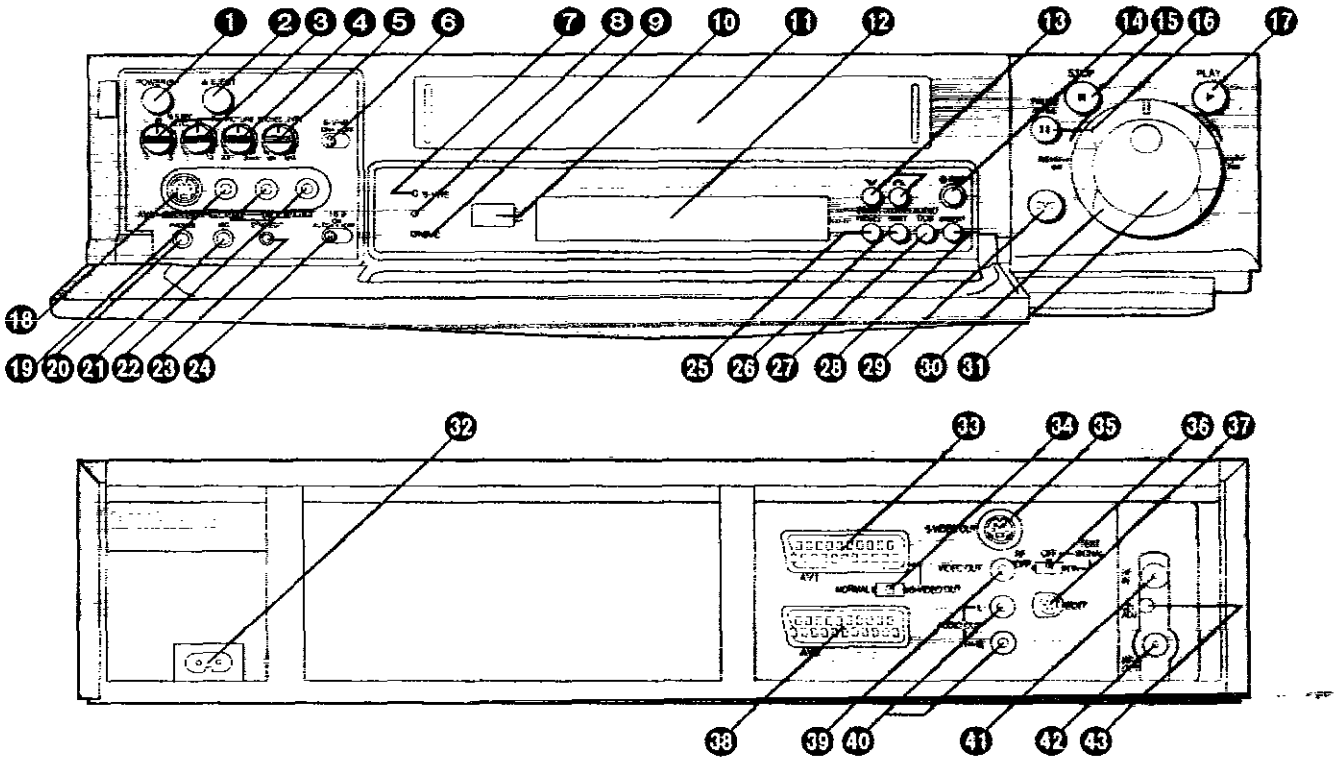
- Load the new batteries with their polarity (⊕ and ⊖) aligned correctly.
- Do not apply heat to the batteries, or an internal short-circuit may occur.
- If you do not intend to use the remote controller for a long period of time, remove the batteries and store them in a cool and dry place.
- Remove spent batteries immediately and dispose of them.
- Do not use an old and a new battery together, and never use an alkaline battery with a manganese battery.

Installing the Batteries



Controls and Connection Sockets

This gives a detailed explanation of the function of each button, switch and connection socket.



❶ POWER ⏻/I
Press to switch the unit from on to standby mode or vice versa. In standby mode, the unit is still connected to the mains.

❷ EJECT
To eject a video cassette.

❸ HI-FI REC LEVEL
To adjust the recording level to peak at +4 dB on the recording level indicator.

❹ PICTURE
To make picture sharper (SHARP) or softer (SOFT).

❺ PHONES LEVEL
For adjusting the volume level of connected stereo headphones.

❻ S-VHS
When recording on an S-VHS cassette tape, select the desired recording format with this switch.
ON: The recording will be made in the S-VHS format.
- The S-VHS indicator lights up.

OFF: The recording will be made in the VHS format.
- The S-VHS indicator does not light up.

(It is possible to make a recording on an S-VHS cassette tape in the VHS format, for example, in order to play back the tape on another VHS VCR.)
- When using VHS cassettes, the recording is made in the VHS format irrespective of the position to which this switch is set.
- Set this switch to "OFF" to play an S-VHS cassette tape recorded in the VHS format.
- When a tape which was recorded in the S-VHS format is played back on a conventional VHS VCR, it is not possible to obtain playback picture.

❼ S-VHS Indicator
Lights up when the S-VHS switch is set to ON.

❽ Standby Indicator
This indicator is lit when the VCR is turned off or the VCR is timer recording standby mode.

❾ CVC Indicator
When the CVC function is on, this indicator is lit.

❿ Infra-red Remote Control Receiver Window

⓫ Cassette Compartment
Insert a video cassette here.

⓬ Display

⓭ ∨ ∧
To select the required programme position (TV station).

⑭ **REC**
To start a recording.

⑮ **STOP**
To stop any playback or recording.

⑯ **PAUSE/STILL**
In the stop mode: Still picture (Jog/Shuttle mode).
During playback: Still picture (Jog/Shuttle mode).
During recording: To interrupt recording.

⑰ **PLAY**
To start playback. "▷" is lit.

⑱ **S-VIDEO IN (AV3)**
To connect the S-Video cable to a movie camera or to another VCR that has a S-Video output socket.
- If an S-Video cable is connected, other video input is automatically switched off.

⑲ **VIDEO IN (AV3)**
To connect the video cable to a movie camera or to another VCR.

⑳ **PHONES**
To connect stereo headphones.

㉑ **MIC**
To connect a microphone for recording. Once connected, this socket has priority.

㉒ **AUDIO IN (AV3)**
To connect the audio cable to a movie camera or to another VCR.

㉓ **SYNC. EDIT**
To connect a movie camera or another VCR equipped with synchronized editing capability.
To connect a movie camera or another VCR equipped with LANC socket for One-Touch-Editing.

㉔ **16:9**
AUTO: For automatically identifying the pictures as 16:9 pictures or 4:3 pictures during recording and playback and showing them on the wide TV screen.
- Normally set at this position.

ON: For recording and playback in such a way that the pictures expanded to 16:9 are shown on the wide TV screen at all time.

OFF: For recording and playback in such a way that 4:3 pictures are shown on the wide or 4:3 TV screen at all times.

㉕ **TIMER REC**
To turn the timer recording function on and off.
⏲ is lit or not lit.
Once operating timer recording function, the normal VCR operation is not possible unless this button is set to off.

㉖ **COUNTER RESET**
To reset the tape counter (elapsed time) to "0:00.00".
- The tape counter is automatically reset to "0:00.00" when a video cassette is inserted.

㉗ **AUDIO DUB**
To set up the VCR for audio dubbing.
A DUB is appeared on screen display.

㉘ **INSERT**
To set up the VCR for insert editing.
INSERT is appeared on screen display.

㉙ **CVC (Crystal View Control)**
ON: Using the CVC function, playback and recording are performed in the state which achieves optimum picture quality in light of characteristics of a tape.
- The CVC indicator is lit.
- This control should normally be left in the ON position.

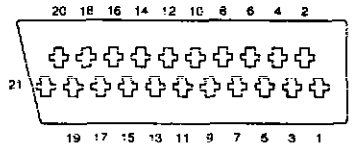
OFF: Turn off the CVC function.
- The CVC indicator is not lit.

㉚ **Shuttle Ring**
In the stop mode: To rewind or fast forward the tape.
In the playback mode:
To search picture backward or forward.
In the still playback mode:
To adjust playback speed backward or forward.
In the rewind or fast forward mode:
To obtain high speed picture.

㉛ **Jog Dial**
To locate any desired frame with utmost precision.

㉜ AC IN~
To connect to the main power supply.

㉝ AV1
This 21-pin scart terminal carries input and output signals for both picture and sound. TV sets equipped with a similar socket can be connected here.
This is also called Scart
Peritel
Euro Connector
Euro AV



NORMAL (AV1/AV2)	S-VIDEO (AV1)
1 AUDIO OUTPUT CH2 (R)	1 AUDIO OUTPUT CH2 (R)
2 AUDIO INPUT CH2 (R)	2 AUDIO INPUT CH2 (R)
3 AUDIO OUTPUT CH1 (L)	3 AUDIO OUTPUT CH1 (L)
4 AUDIO GND	4 AUDIO GND
5 BLUE GND	5 No connection
6 AUDIO INPUT CH1 (L)	6 AUDIO INPUT CH1 (L)
7 BLUE OUTPUT (AV1) BLUE INPUT (AV2)	7 No connection
8 SWITCHING VOLTAGE	8 SWITCHING VOLTAGE
9 GREEN GND	9 No connection
10 No connection	10 No connection
11 GREEN OUTPUT (AV1) GREEN INPUT (AV2)	11 No connection
12 No connection	12 No connection
13 RED GND	13 No connection
14 BLANKING GND	14 No connection
15 RED OUTPUT (AV1) RED INPUT (AV2)	15 C OUT
16 BLANKING	16 No connection
17 VIDEO OUTPUT GND	17 VIDEO OUTPUT GND
18 VIDEO INPUT GND	18 No connection
19 VIDEO OUTPUT	19 Y OUT
20 VIDEO INPUT	20 VIDEO INPUT
21 GND	21 GND

Note: RED, GREEN and BLUE are inputs only.

㉞ NORMAL/S-VIDEO OUT
NORMAL: Normally set to this position.
S-VIDEO OUT (AV1):
Set to this position when connecting the VCR to a TV set equipped with 21-pin Connector with pins for separate Y/C signal input.

㉟ S-VIDEO OUT
To connect the S-Video cable to a TV or another VCR that has a S-Video input socket.
- If an S-Video cable is connected, other video output is automatically switched off.

㊱ RF OFF/TEST SIGNAL
RF OFF: Set to this position when the VCR is connected to the TV via the 21-pin scart cable.
TEST SIGNAL OFF:
Set to this position when the VCR is connected to the TV via the RF coaxial cable only.
TEST SIGNAL ON:
Set to this position when tuning the TV into the VCR.
The test signal is transmitted on channel 36 initially.

㊲ EDIT
By connecting the optional Editing Controller (VW-EC300E/VW-EC310E) to this socket, such editing functions as Assemble Editing, Insert Editing and Audio Dubbing can be performed more quickly and efficiently between two VCRs or between a VCR and a movie camera.

To connect the Edit cable (VW-K5E) to a movie camera or to another VCR for One-Touch-Editing.

㊳ AV2
To connect to a decoder, a satellite receiver or another VCR.
- The 21-pin list is same with AV1.

㊴ VIDEO OUT
To connect the video cable to a TV or another VCR.

㊵ AUDIO OUT
To connect the sound to a stereo audio system.

㊶ RF IN
To connect to the external aerial.

㊷ RF OUT
To connect to the aerial terminal on a TV set.

㊸ CH ADJ.
To adjust the RF transmitting channel 30–42.

Setting Up

Connections

This tells you how to connect with an aerial, TV, etc.

Tuning the TV to your VCR

The VCR supplies a signal to the TV set via the RF coaxial cable on channel 36 of the UK broadcasting system. Your TV must be tuned into this channel in order to view the VCR playback picture.

If the connection to the TV includes the 21-pin scart cable, the playback picture can be viewed by selecting AV on your TV. The RF coaxial cable must still be connected as shown on page 12, but the TV need not be tuned to channel 36.

Auto Setup

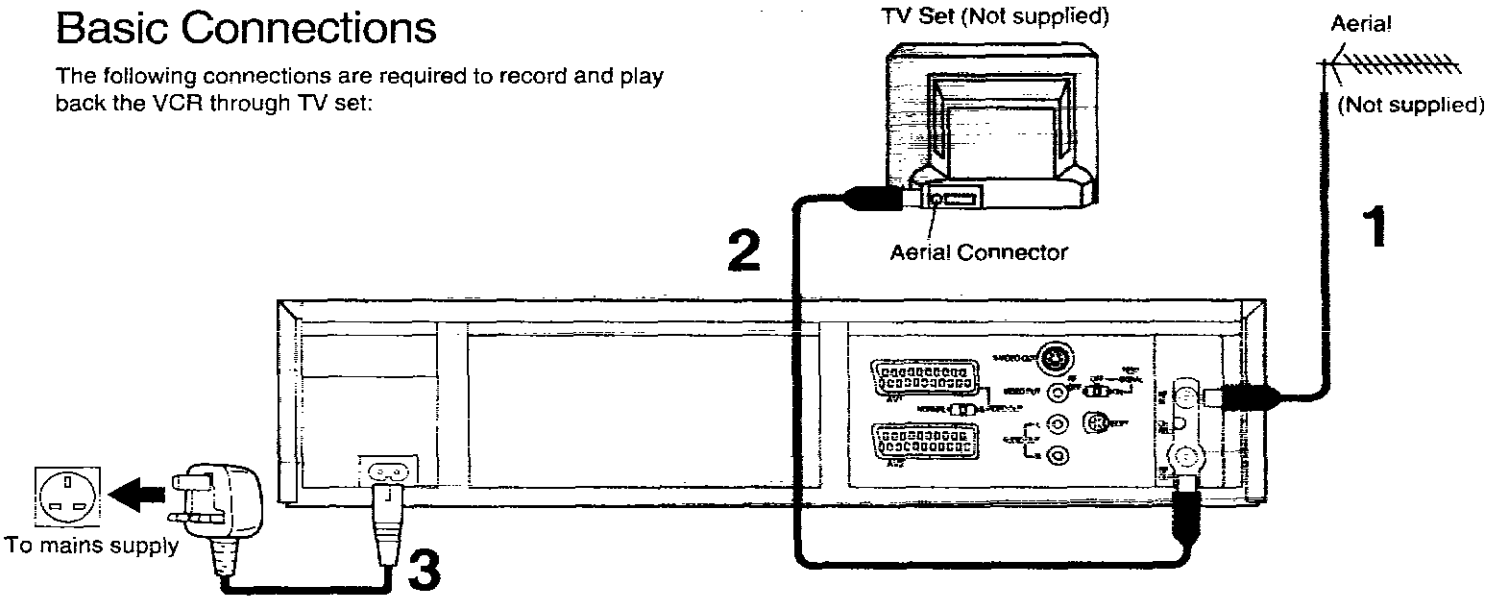
When the VCR is turned on after connecting the aerial lead and the mains lead, Auto setup (Auto tuning and Auto clock setting) starts.

Connections

This tells you how to connect with an aerial, TV, etc.

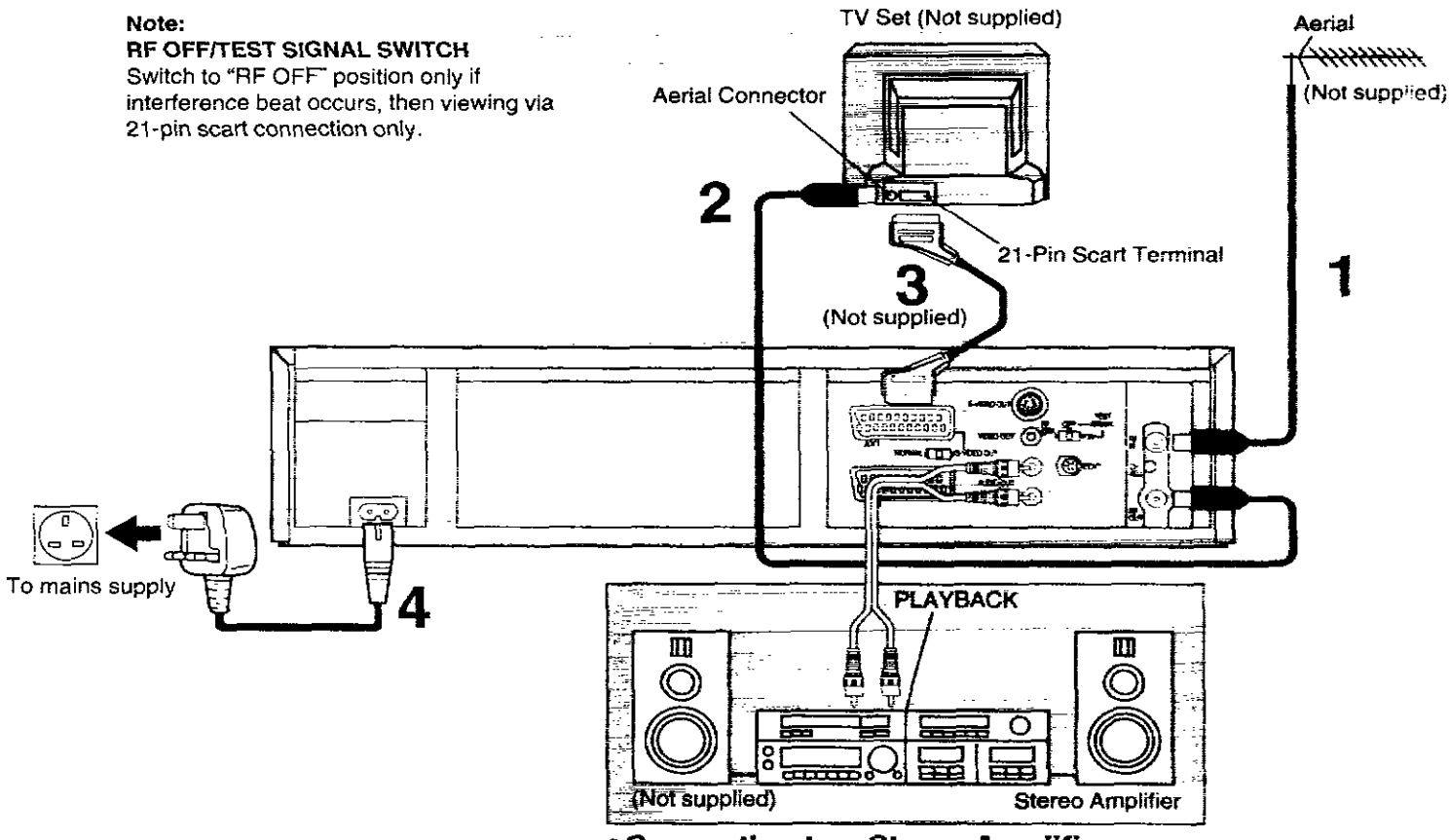
Basic Connections

The following connections are required to record and play back the VCR through TV set:



Connection to a TV Set with 21-Pin Scart Terminal

Note:
RF OFF/TEST SIGNAL SWITCH
Switch to "RF OFF" position only if interference beat occurs, then viewing via 21-pin scart connection only.



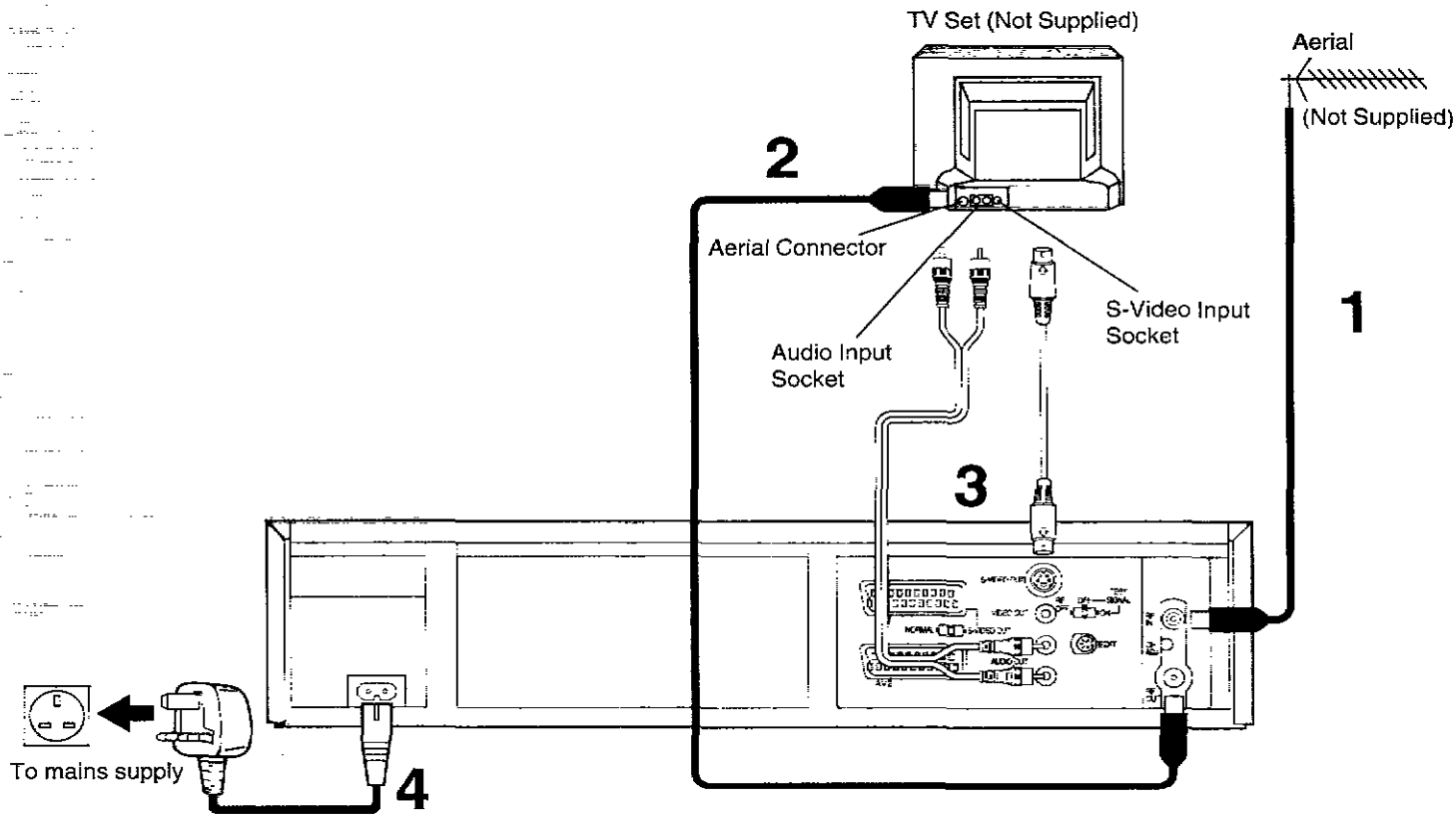
•Connection to a Stereo Amplifier

Connection to a TV Set with S-Video Socket

This VCR uses the S-VHS format that makes it possible to obtain high resolution and high picture quality by using the high-performance S-VHS video cassette tapes.

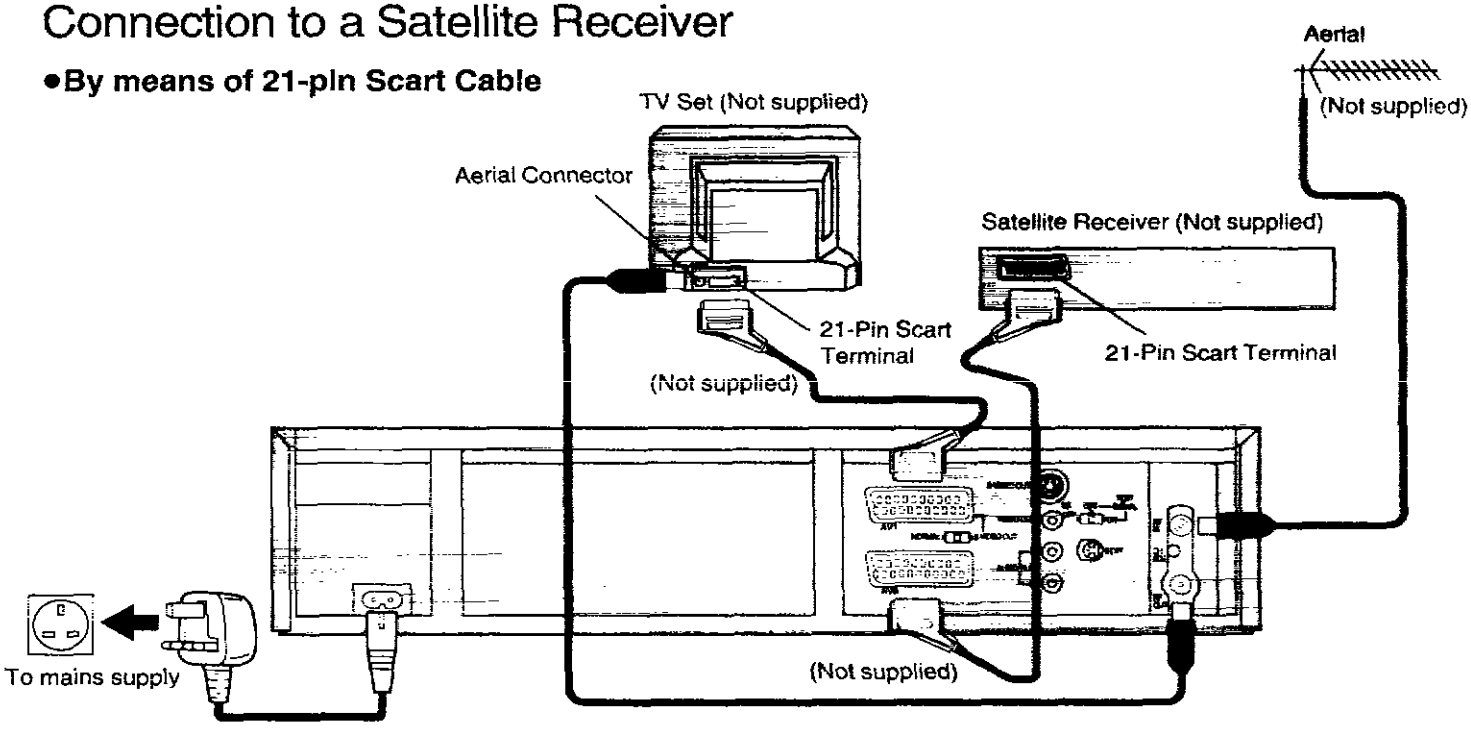
The conventional video sockets of VCRs output (input) a combination of the luminance signal (Y) and colour signal (C) which are recorded on the video tape. The new S (Separate)-Video Socket allows separate transmission of signals in order to obtain clearer pictures.

The connection with the S-Video Cable can also be used for playback of a tape that was recorded in the conventional VHS system. The "S" in the "S-Video Socket" stands for "SEPARATED Y/C" not for "S-VHS".



Connection to a Satellite Receiver

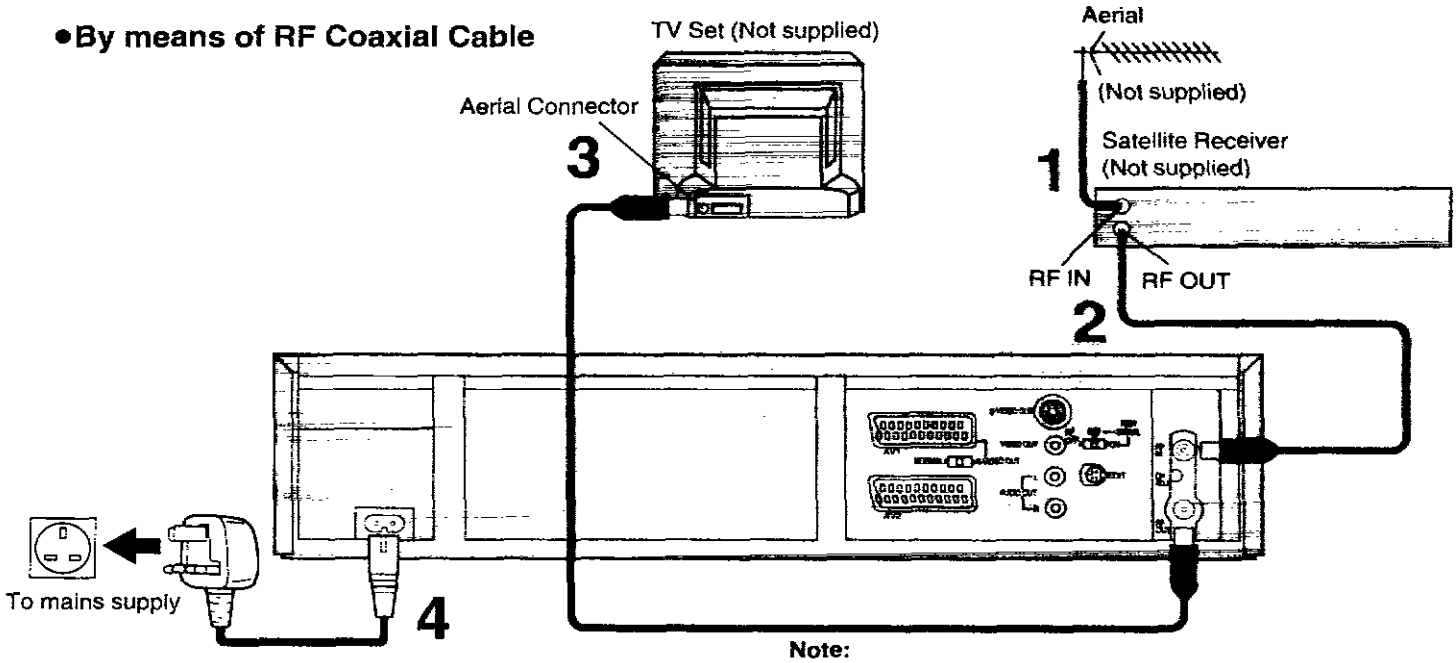
•By means of 21-pin Scart Cable



Note:
"RGB" is an abbreviation for "RED/GREEN/BLUE" signals. If the TV with RGB input capability is connected to AV1 and the unit with RGB output capability is connected to AV2, the TV can receive RGB signal from the unit through the VCR.

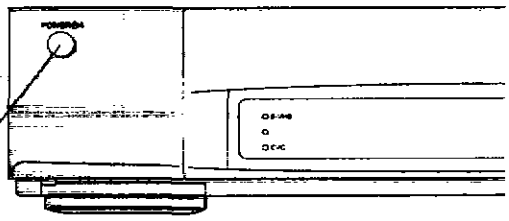
- Use full-wired 21-pin AV cables for the connection.
- Selection of RGB or normal video output is done by the external equipment connected to AV2 terminal.
- **RF OFF/TEST SIGNAL SWITCH**
  Switch to "RF OFF" position only if interference beat occurs, then viewing via 21-pin scart connection only.

•By means of RF Coaxial Cable



Note:
RF output channel of the sattellite receiver should be adjusted away from channel 36, which is used by the VCR, e.g. re-adjust to channel 38. Also select "SKY ONE" or "SKY NEWS" on the sattellite receiver to ensure reliable tuning before starting the Auto Setup.

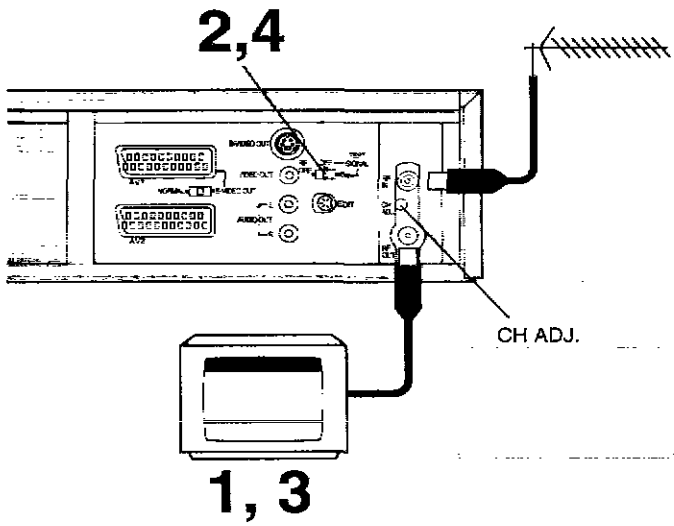
Tuning the TV to your VCR



1

It is possible to view the video picture on your TV in the same way that you watch TV broadcasts.

If you have connected the VCR to the TV through the 21-pin scart terminal, then you do not need to follow the procedure mentioned below.



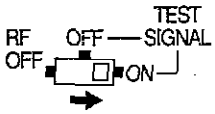
Preparations

- Turn on the TV.
- Refer to the operating instruction of the TV set and carry out tuning/preset procedure.

Operations

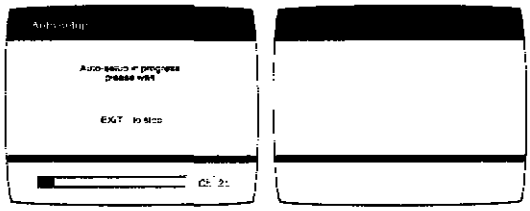
1

Turn on the VCR.

2 

To generate a test pattern, set **RF OFF/ TEST SIGNAL** to TEST SIGNAL ON.

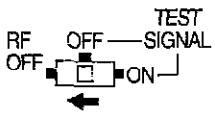
3 **On Screen Display**



(During Auto Setup) (After Auto Setup)

Set the TV to an unused position which you wish to use for your video playback.

- Tune the TV until the test pattern appears on the screen.
- On Panasonic TV the programme number 0 should be selected to obtain best performance.
- When the VCR is turned on after connecting the aerial lead and the mains lead, Auto setup (Auto tuning and Auto clock setting) starts. (See next page.)

4 

Set ***RF OFF/TEST SIGNAL*** to TEST SIGNAL OFF.

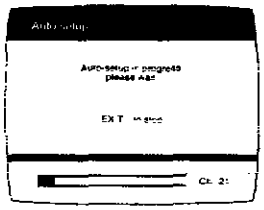
Note:
The test signal is transmitted on channel 36 of the UK broadcasting channels. If you are encountering interference from another broadcast on the video channel, you may readjust to a free channel (30–42) by using the **CH ADJ.** screw which is located on the rear of the VCR. Please note that if the **CH ADJ.** screw is used then you will have to retune your TV to the test signal as in item **2** to **4** above.

Auto Setup

Auto Setup

When the VCR is turned on after connecting the aerial lead and the mains lead, Auto setup (Auto tuning and Auto clock setting) starts.

On Screen Display



- The Auto setup is searching for TV station from minimum to maximum and memorizing the data for every programme position.
- The Auto setup takes two or more minutes to complete the search for TV station and the clock setting.
- If the clock setting screen appears after auto setup has been completed, refer to page 40 and proceed with the setting.

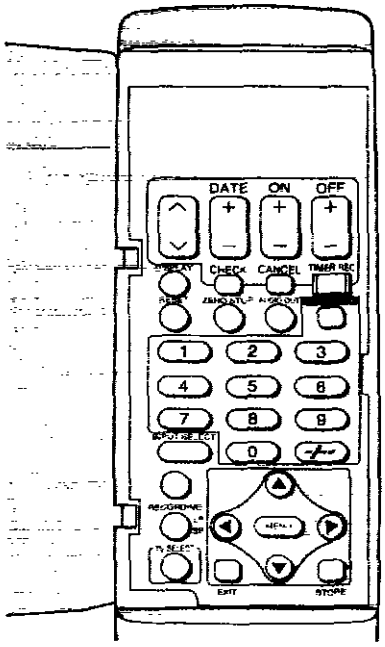
Note:
If VCR is not correctly set by Auto setup, see **Various Settings** on pages 34–36 and 40.

Viewing the TV station list

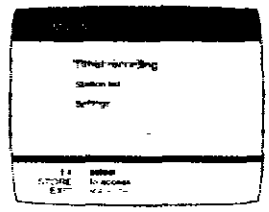
Use the following steps to confirm that the Auto setup is correctly set.

Preparations

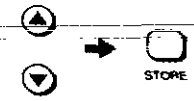
- Confirm that the TV is on and the VCR viewing channel is selected.
- Turn on the VCR.

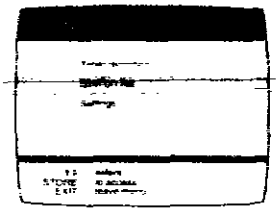


1 Press **MENU**.

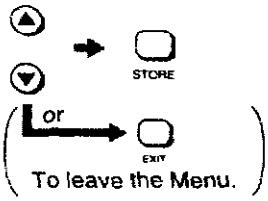


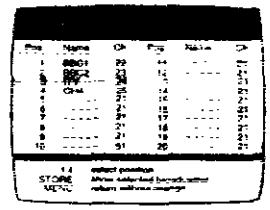
2 Select **Station list**.





3 Select the desired TV station, if you want to view the broadcast.





The station names have been entered and set correctly.

Auto setup is completed.

When the station names have not been correctly entered and set.

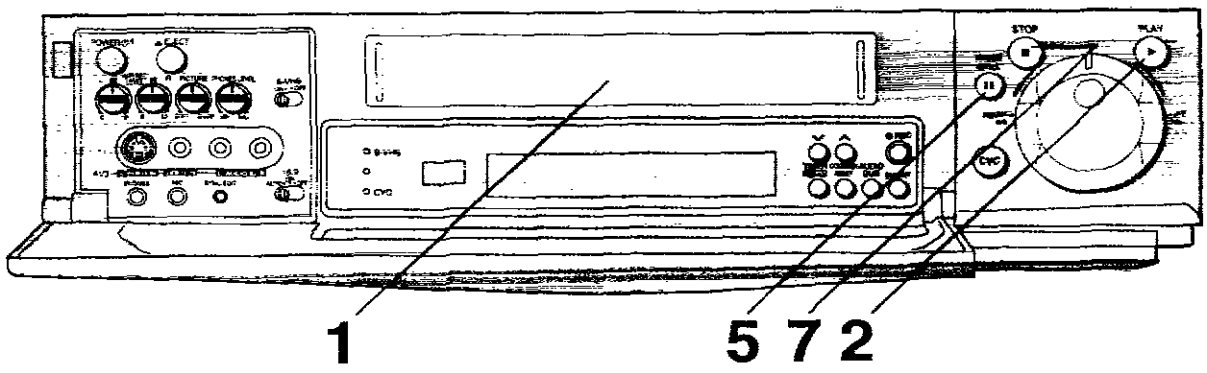
Perform the settings on page 34.

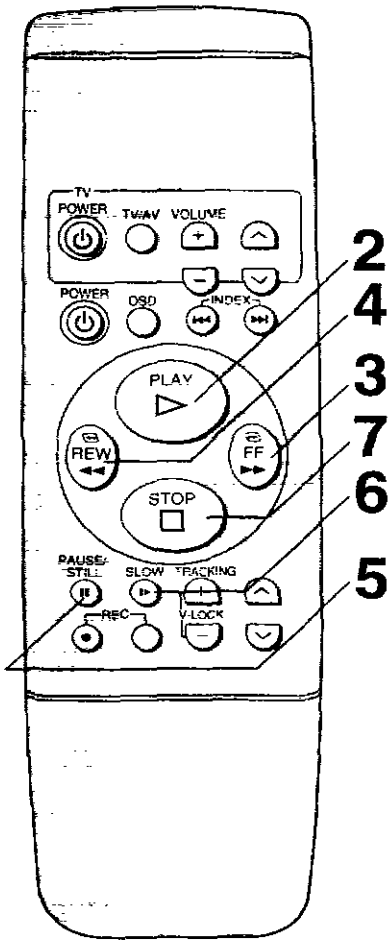
Basic Operations

Playback

Manual Recording

Playback





Operations	Display Symbols	
1		Insert a recorded cassette tape.
2 PLAY ▷		Start viewing the picture.
3 → FF		Search forward by briefly pressing **FF**. ●To change back to normal playback, press **PLAY**.
4 → REW		Search backward by briefly pressing **REW**. ●To change back to normal playback, press **PLAY**.
5 → PAUSE/ STILL		View a still picture. ●To continue the normal playback, press **PLAY** or **PAUSE/STILL**.
6 → SLOW		View the slow motion picture. ●To continue the normal playback, press **PLAY**.
7 STOP □		Stop viewing the picture.

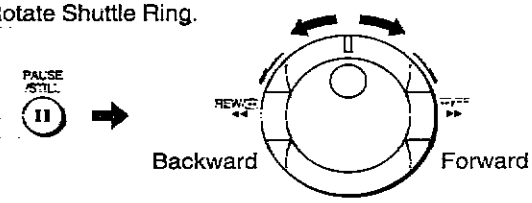
Other Playback Functions

To change the Playback Speed

Using Shuttle Ring:

1 Press **PAUSE/STILL** on the VCR.

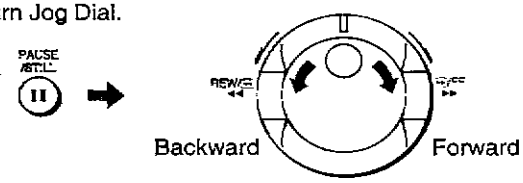
2 Rotate Shuttle Ring.



To locate the Desired Picture Exactly

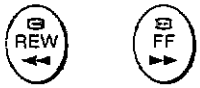
1 Press **PAUSE/STILL** on the VCR.

2 Turn Jog Dial.



To obtain High Speed Picture during Fast Forward or Rewind

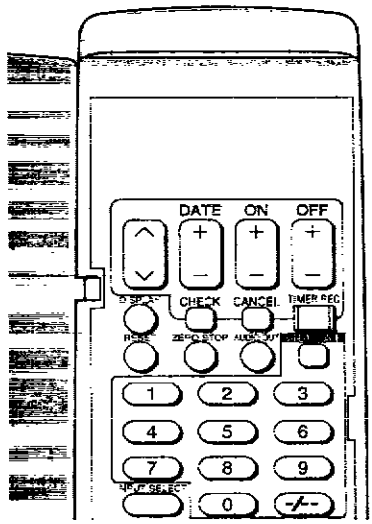
Keep **FF** pressed during fast forward.
Keep **REW** pressed during rewind.



To return to a Specified Scene

1 Press **RESET** to set the counter to 0:00.00.

2 After playback, press **ZERO STOP** in the stop mode.
- The tape will be rewound or fast forwarded to 0:00.00 approximately.



To adjust the tracking and the vertical locking

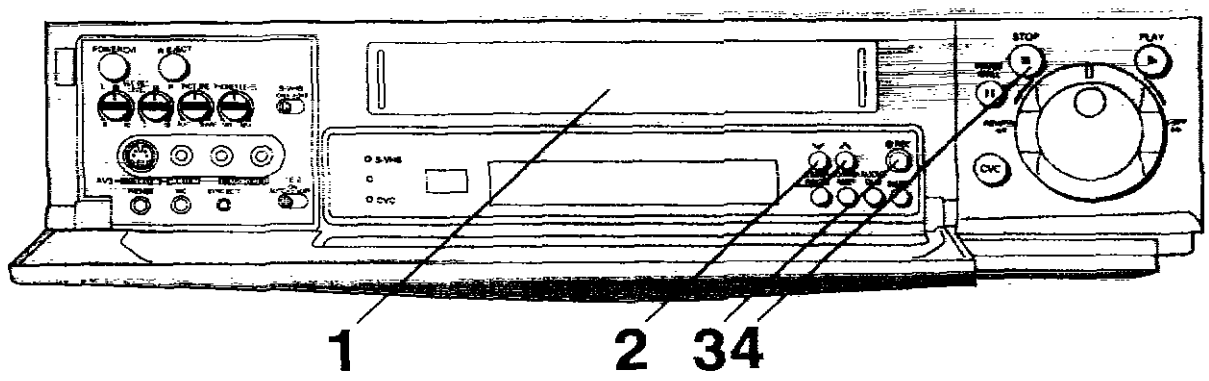
For manual tracking adjustment
The + and − buttons are used to adjust the tracking when, for example, noise bars on the picture are better removed manually than by the automatic digital tracking control.
Press both buttons together to return to automatic digital tracking control.

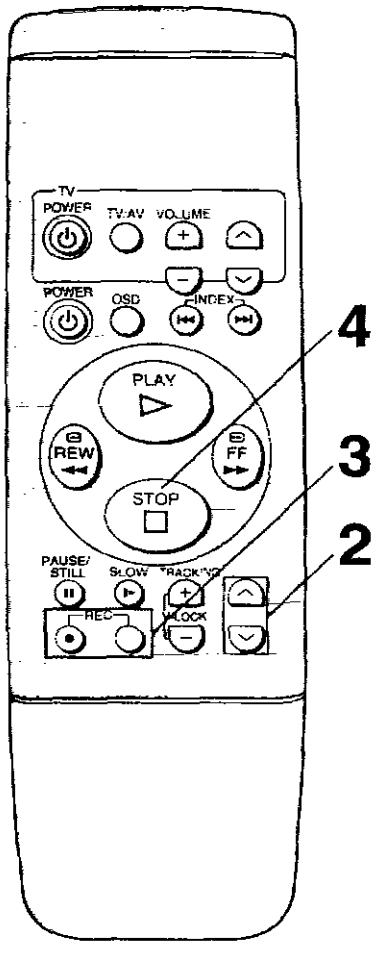
For slow tracking adjustment
When noise bars appear during Still or Slow playback, switch over to slow playback and adjust with the + or − button to reduce the noise bars.

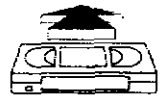
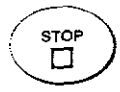
For vertical locking adjustment
Use the + and − buttons to minimize any vertical jitter during still-picture playback.
- Even after manual adjustment, noise bars or vertical jitter may not be eliminated completely, especially for tapes recorded on another VCR. This is not malfunction.

Notes:
- Audio reproduction of linear (conventionally recorded) tapes will be monaural when played back on the FM Hi-Fi video recorders.
- Cue, review or slow playback will be automatically released after 10 minutes, and still playback after 5 minutes.
- In "LP" mode only:
  1. During any playback mode other than normal playback, the picture may have some noise bars, the colour may be unstable, or a black and white picture may appear.
  2. When playing back a tape which was recorded on another VCR, it may be necessary to adjust the Tracking Control. In some cases the picture quality may still be inferior. This is due to limitation of format.

Manual Recording





Operations	Display Symbols	
1		Insert a cassette tape. •If it has already been inserted, press **POWER** to turn the VCR on.
2		Select TV station.
3		Start recording.
4		Stop recording.

To select the Desired Tape Speed

Press **RECORDING SP/LP** before recording.

SP gives the best picture quality.
LP gives the longest recording time.

To interrupt Recording

Press **PAUSE/STILL** during recording.
Press again to continue recording.

To record One TV Programme while Viewing Another Programme

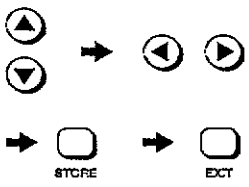
1 Refer to the manual recording operations steps **1** to **3** (page 20).

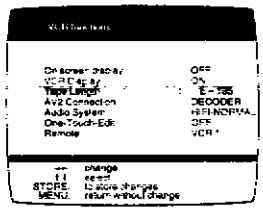
2 Select the TV programme on your TV set you wish to view at the present time.

To display the Approximate Remaining Tape Time

1 Select **Tape Length** from On Screen Display and select the corresponding cassette tape length. See page 38.

On Screen Display





◀ E-180: For E30, -60, -90, -120 and -180 tapes.
E-195: For E195 tape.
E-240: For E240 tape.
E-260 ▶: For E260 and -300 tapes.

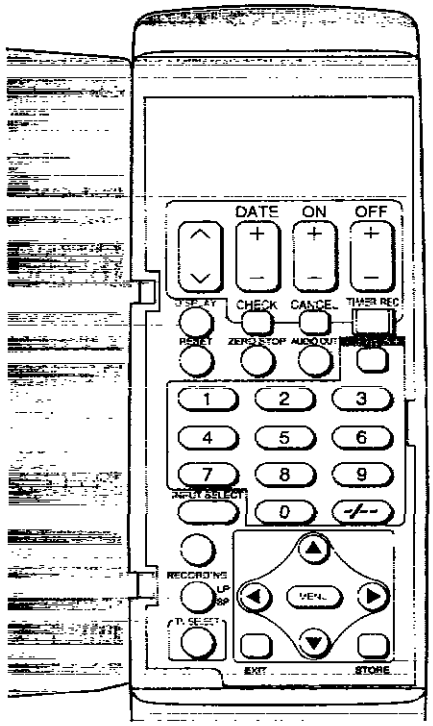
2 Press **DISPLAY**.

→Clock→Counter→**Remaining Tape Time**

- The remaining tape time may not be displayed correctly depending on the tape used.

Notes:

- When a video cassette with a broken off tab is inserted, the "REC" indication will flash to indicate that recording is not possible.
- The recording pause mode will be automatically released after 5 minutes and be back to the stop mode.



The NICAM Broadcast System

This VCR is equipped with the NICAM sound system. NICAM is a 2 Channel sound broadcast system to provide either a high quality stereo sound track or 2 independent MONO sound tracks, M1 and M2. NICAM programmes are always accompanied by standard sound broadcasts and you can select the desired sound with **AUDIO OUT** during playback.

- The NICAM digital stereo sound can only be recorded on the Hi-Fi audio track.
- To record the regular sound (ordinary normal sound) on the FM audio tracks when a NICAM programme is received, select **NICAM OFF** during manual tuning procedure. See page 34.

Important Note for the NICAM System

When this VCR is switched on, the tuner will automatically switch to a NICAM broadcast, if NICAM is being transmitted. During test transmissions, it is possible that the sound received doesn't correspond to the picture being viewed. In order to receive a synchronized sound and picture, select monaural sound with **AUDIO OUT** or **NICAM OFF** setting. This will only apply until NICAM transmissions are fully operational.
At this time the NICAM signal is transmitted on stereo channels only, since the M1 and M2 formats are not yet available.

Advanced Operations

Timer Recording

Using On Screen Display
Programming the Video Plus+ PlusCode
Up to 8 timer programmes can be recorded up to one month in advance by setting the timer.

Editing

Assembly Editing
This function can be used to make up an edited tape from other recordings or video sources.

A new scene can be added to the end of a previous one.

Insert Editing
This is used to substitute one scene for another providing.

Audio Dubbing
The audio dubbing is made on the normal audio track and erases the original sound on this track. On Hi-Fi audio tracks, however, the original sound is maintained.

One-Touch-Editing
With this editing, it is easy to perform repeated assemble editing, insert editing or audio dubbing operations.

Other Functions

On Screen Display
VHS Index Search System
NTSC Playback
Other Automatic Functions

Timer Recording

Using On Screen Display

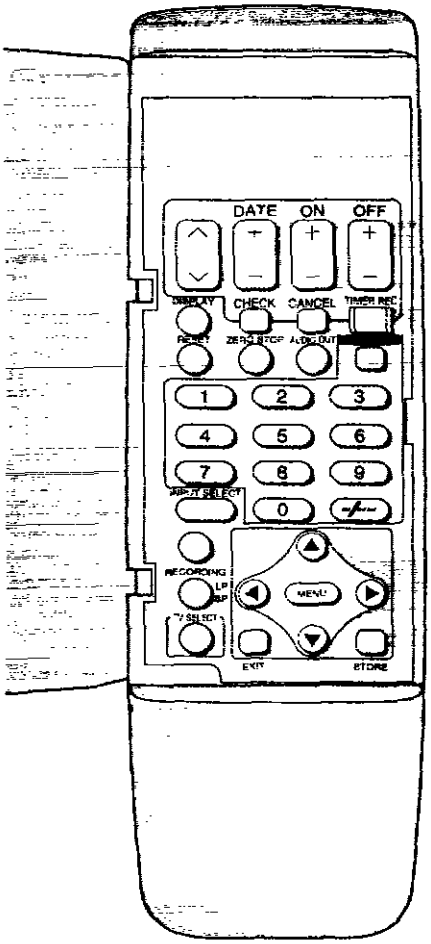
Up to 8 timer programmes can be recorded up to one month in advance by setting the timer, including weekly and daily programmes.

Preparations

- Insert a cassette tape with an intact erasure prevention tab.
- Confirm that the TV is on and the VCR viewing channel is selected.

For Example:

Programme position (channel); 2
Date; 27th, October
Starting time; 20:02
Ending time; 21:30
(Present date; 16th, October)



Follow the operation guide on screen display.
Set each item by using ▲ ▼ ◄ ► or ∧ ∨, **DATE**, **ON**, **OFF**.

Operations

1 Press **MENU**, and then select **Timer recording**.

2 Select the unoccupied position.

3 Set **Programme position** (channel) "2".

4 Set **Date** "27/10".

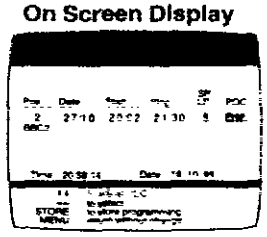
5 Set **Starting time** "20:02".
- When it is kept pressed, the indication changes in 30-minute steps.

6 Set **Ending time** "21:30".

7 Select the desired **Tape speed (SP/LP)**.

8 Select **PDC ON** or **OFF (---)**.
- PDC is automatically set to ON if the TV station transmits PDC signals. But it can be set to OFF manually if desired.

On Screen Display



9 Press **STORE**.
- **For the setting other programmes in succession, repeat steps 2–9.**

10 To activate timer recording, press **TIMER REC**.

Weekly Timer Recording

In step **4**, select the desired day by pressing ▼ or **DATE** −.

Daily Timer Recording

For this timer function, several groups of days can be selected.

Ⓐ Daily recording from Monday to Friday.

Ⓑ Daily recording from Monday to Saturday.

Ⓒ Daily recording from Sunday to Saturday.

In step **4**, select the desired days by pressing ▼ or **DATE** −.

Timer Recording from External Signal Source

If Timer Recording is performed by a unit connected to the AV1, AV2 Socket or AV3 (Audio/Video/S-Video input sockets), select the A1, A2 or A3 for the programme position.

A1: Through the AV1 socket.
A2: Through the AV2 socket.
A3: Through the AV3 (AUDIO IN/VIDEO IN/S-VIDEO IN) sockets on front panel.

Setting other Programmes in Succession

Repeat steps **2**–**9**.

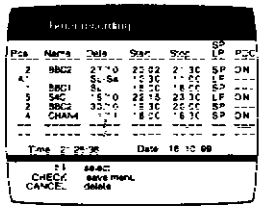
Checking a Timer Programme

- The VCR must be turned on, or the timer recording indicator "⏲" is lit.
- Confirm that the TV is on and the VCR viewing channel is selected.

Press **CHECK**. CHECK

- On Screen Display may be distorted in the PDC recording standby mode.

On Screen Display



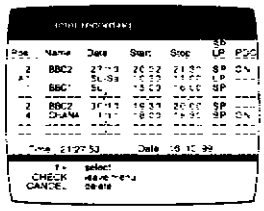
Cancelling a Timer Programme

- The VCR must be turned on, or the timer recording indicator "⏲" is lit.
- Confirm that the TV is on and the VCR viewing channel is selected.

1 Press **CHECK**. CHECK

2 Select the desired timer programme.

3 Press **CANCEL**. CANCEL



Note:

If a timer recording is not performed to the end (due to insufficient tape or cancellation by the user), the programmed timer recording data will be cancelled from the memory by 4 a.m. the next day.
However, if the Timer Record Function is activated at that time, the programmed timer recording data will be cancelled at 4 a.m. the next day.
If the timer standby mode is performed until 4 a.m. the next day, the programmed timer recording data will not be cancelled.
In case the broadcast station transmit PDC/VPS label to suspend recording of some programmes, the timer recording data may remain in the memory even after timer recording reaches the end.

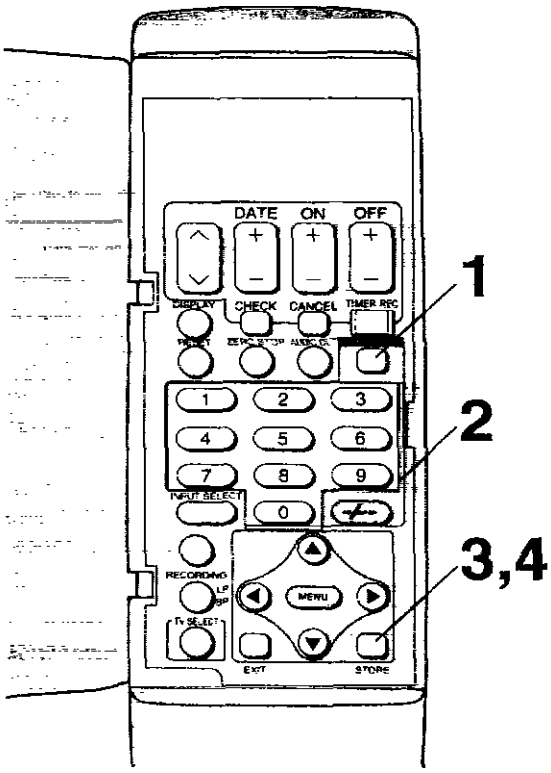
PDC (Programme Delivery Control)

The Programme Delivery Control (PDC) is a very convenient system which assures that the TV programmes you have programmed for timer recording will be recorded exactly from beginning to end, even if the actual broadcasting time differs from the scheduled time due to delayed start or extension of the programme duration. Also, if a programme is interrupted and for example, some special news item is inserted, the recording will also be interrupted automatically and resumed when the programme continues.

- When using PDC recording, the start time must be set exactly as published in TV programme guides, e.g. newspapers, magazines, otherwise recording will not start.
- Since PDC signals are received when a recording is programmed using PDC, the power of the unit's tuner section is turned on and the programmed broadcasting is received. When a multiple number of programmes have been programmed for timer recording, all of the broadcasts concerned will be received in sequence.
- If the actual broadcasting times of timer recordings overlap (regardless of whether they are PDC-controlled), the recording that starts first always has priority, and the recording of the later programme will start only after the first timer recording has finished.
- When the PDC signal drops out because the broadcast signal is weak, or when a broadcasting station does not transmit a regular PDC signal, the timer recording will be performed in the normal mode (without PDC) even if it was programmed for PDC.
  In this case, even if the timer recording is performed, whatever has been programmed will not be cancelled at that particular time but at 4 a.m. on the following day.
- PDC signal is detected at the time of Auto-setup only, hence if a station starts to broadcast PDC later on, then Auto-setup needs to be restarted to update the internal list used for displaying PDC status "ON" or "––" (no PDC) during Timer Programming.
- If a station does not broadcast PDC then PDC status during Timer Programming will display "––", in this case PDC must NOT be set manually to "ON", otherwise the VCR will not start timer programming at the programmed time.

Programming the Video Plus+ PlusCode

Programming is now easier than ever: simply enter the PlusCode provided in the programme schedule column carried by newspapers and magazines.
PlusCodes are numbers which are assigned to each programme listed in the TV programme schedule carried in newspapers and TV guides. When these codes are entered and **STORE** is pressed. the codes are converted into the actual programming.



Preparations

- Insert a cassette tape with an intact erasure prevention tab.
- Confirm that the TV is on and the VCR viewing channel is selected.

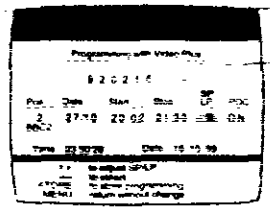
Operations **Display Symbols**

1 Press **VIDEO PLUS+**.

2 Enter a Video Plus+ PlusCode for the TV programme to be recorded.
Example: 920216

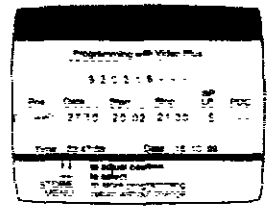
3 Press **STORE**.

On Screen Display



- To extend the ending time or to make any corrections, use buttons ▲ ▼ ◄ ► or ∨ ∧, **DATE**, **ON**, **OFF**.

When programming for the first time using a Video Plus+ PlusCode, "––" will appear for the programme position because the station has been manually tuned:
In this case, select the programme position of your VCR which receives the TV station you entered the Video Plus+ PlusCode for at step **2** using button ▲ or ▼.



- Next time Video Plus+ PlusCode for this station is entered, the correct position will appear.

4 Press **STORE** once more to confirm.

- The VCR will go into timer recording standby mode.

Note:
The VCR will automatically change to the timer recording standby mode after about 1 minute, if **STORE** is not pressed.

5 When programming two or more programmes, repeat steps **1–4**.

Notes:

- To release from the standby mode, press **TIMER REC**.
- When the PlusCode is used for programming, the recording time may be slightly longer than the actual programme time.
- The procedures for checking and cancelling a timer programme are the same as on page 25.

Editing

Assembly Editing

This function can be used to make up an edited tape from other recordings or video sources.

A new scene can be added to the end of a previous one.

Preparations

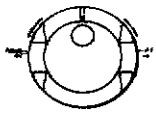
- Connect a movie camera or another VCR to this VCR as shown.
- Insert a recorded cassette tape with an intact erasure prevention tab.
- Select the video source required by pressing **INPUT SELECT** to set A1, A2 or A3.

A1: Through the AV1 socket.
A2: Through the AV2 socket.
A3: Through the AV3 (AUDIO IN/VIDEO IN/S-VIDEO IN) sockets on front panel.

Operations

1 Press **PAUSE/STILL** on the recording VCR.

2 Search for the end of the previous recording.



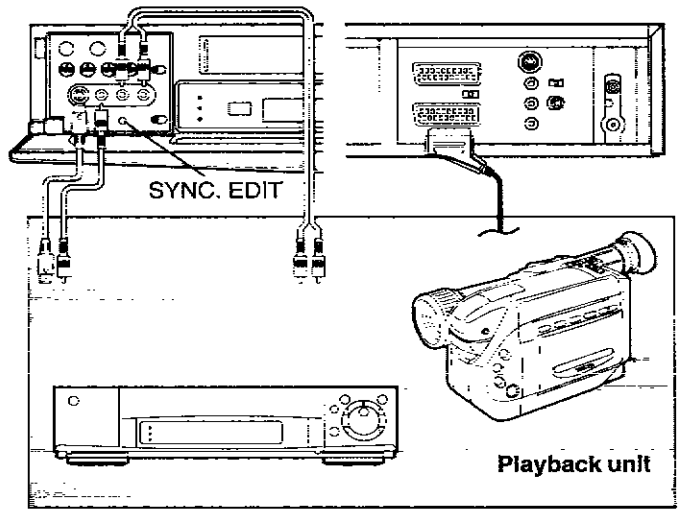
3 Press **REC** to switch the VCR from the pause mode to the recording standby mode.

4 Start the new recording by pressing **PAUSE/STILL** again.

5 Press **STOP** to stop recording.

Note:
The new sound will be recorded on both the normal and Hi-Fi sound tracks, only monaural sound recording is possible on the normal sound tracks.

Recording VCR



Synchronized Editing

It is possible to synchronize the playback start and stop of the Movie Camera with the recording start and stop of this VCR.

Preparations

- Connect a Movie Camera to this VCR with Synchro Connection Cord (VW-K1E).
- Select **One-Touch-Edit** to OFF for synchronized editing. (See page 39.)

1 Put the VCR in the recording pause mode by pressing **REC** and **PAUSE/STILL**.

2 Put the Movie Camera in the still playback mode at the point where you want to start editing.

3 Press **PAUSE/STILL** on the VCR.
- The Movie Camera changes over to the playback mode and the dubbing will start automatically.

Synchronized Editing between the VCRs
When editing from another VCR equipped with Synchro Edit Socket, synchronized start and stop of both VCRs can be activated from this VCR.

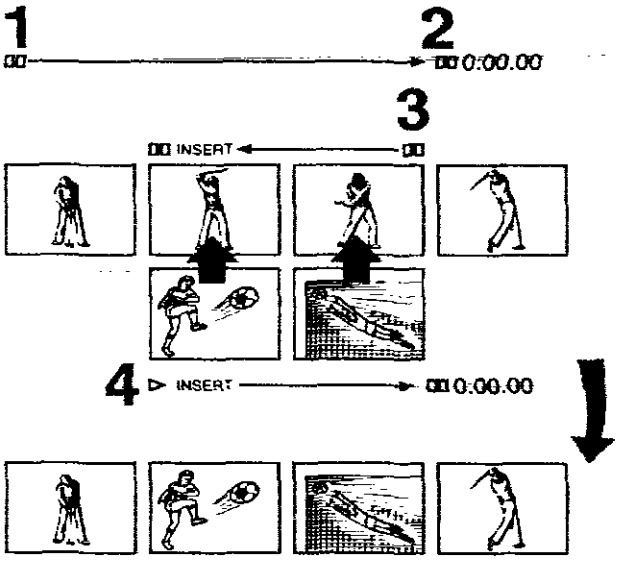
The operation is the same as described for synchronized editing from a Movie Camera.

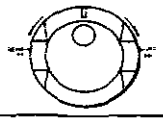
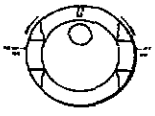
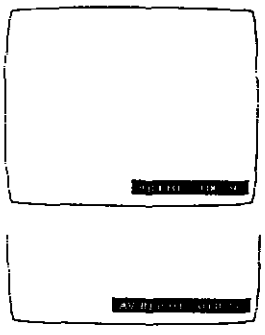
Insert Editing

This is used to substitute one scene for another providing.

Preparations

- Insert a recorded cassette with an intact erasure prevention tab.
- Select the video source required by pressing **INPUT SELECT** to set A1, A2 or A3.
  - A1: Through the AV1 socket.
  - A2: Through the AV2 socket.
  - A3: Through AV3 (AUDIO IN/VIDEO IN/S-VIDEO IN) sockets on front panel.



Operations	Display Symbols	
1		Press **PAUSE/STILL** on recording the VCR.
2 		Search for the Edit out (ending) point, and set the counter to 0:00.00 by pressing **COUNTER RESET**.
3 	On Screen Display 	Search for the Edit in (starting) point, and press **INSERT**. •*If you want to replace the sound on the "normal" audio track, press* **AUDIO DUB**, too. (AV Insert Editing)
4		Start insert editing by pressing **PAUSE/STILL**. •The insert editing will finish when the counter reaches 0:00.00.

Note:
Insert Editing cannot be used on blank sections of a tape. In this case use Assembly Editing first.

The new sound will be recorded on the Hi-Fi sound track. If AUDIO DUB selected, the new sound will also be recorded on the normal sound track.

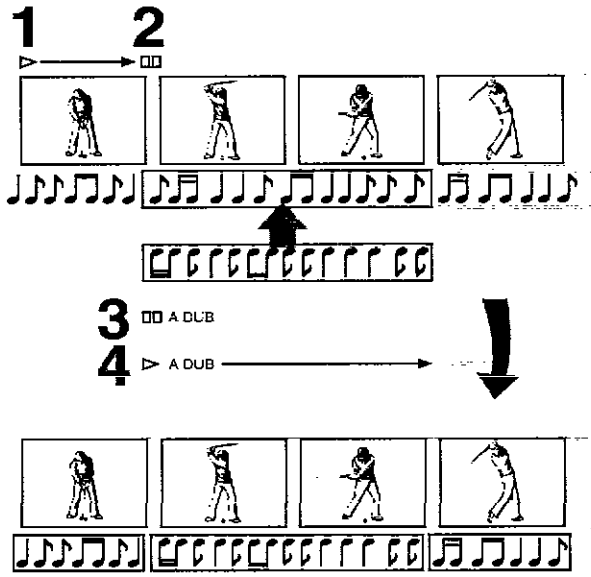
Only monaural sound recording is possible on the normal sound tracks.

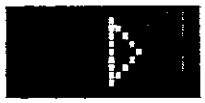
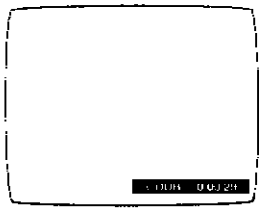
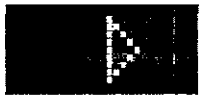
Audio Dubbing

The audio dubbing is made on the normal audio track and erases the original sound on this track. On Hi-Fi audio tracks, however, the original sound is maintained.

Preparations

- Insert a recorded cassette with an intact erasure prevention tab.
- Select the video source required by pressing **INPUT SELECT** to set A1, A2 or A3.
  - **A1:** Through the AV1 socket.
  - **A2:** Through the AV2 socket.
  - **A3:** Through the AV3 (AUDIO IN) sockets on front panel.



Operations		Display Symbols	
1	PLAY		Search for the starting point for audio dubbing.
2	PAUSE /STILL		Press **PAUSE/STILL** at the starting point.
3	AUDIO DUB	On Screen Display 	Set for audio dubbing by pressing **AUDIO DUB**. • On some televisions, the screen image may become unstable or begin to scroll at this point. However, this is not an indication of a malfunction.
4	PAUSE /STILL		*Start recording the new sound by pressing* **PAUSE/STILL**. • Stop recording by pressing **STOP**.

Note:
The new sound will be recorded on the normal sound track of the tape, and the original sound will remain on the Hi-Fi sound track. Only monaural sound recording is possible on the normal sound track.

To hear the new sound, select the normal sound track by pressing **AUDIO OUT**.
To hear the new sound and original sound mixed together, set **Audio System** to HIFI-MIX. (See page 38.)

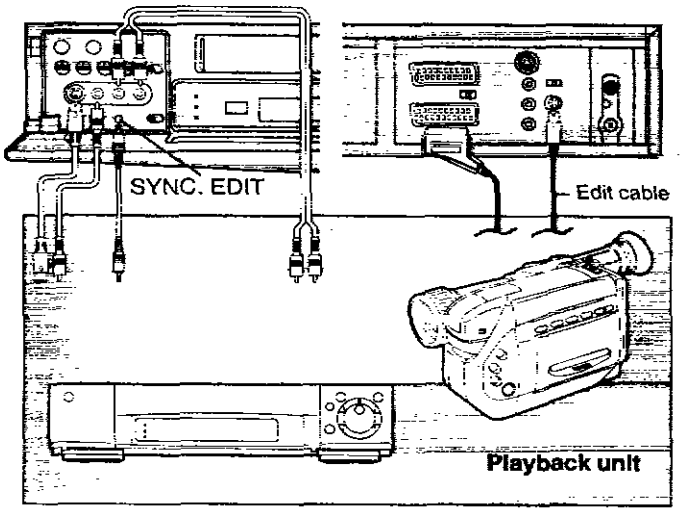
One-Touch-Editing

With this editing, it is easy to perform repeated assemble editing, insert editing or audio dubbing operations.

Preparations

- Before proceeding with the connections, check that the AC mains lead of both VCRs have been connected.
- Before the VCR is connected to a movie camera or another VCR, select **One-Touch-Edit** to ON. (See page 39.)
  The playback VCR display or movie camera viewfinder image may be abnormal if the edit cable is connected with **One-Touch-Edit** left OFF.
- Connect a movie camera or another VCR to this VCR as shown.
- Use the **SYNC. EDIT** socket when connecting this unit to a VCR or movie camera equipped with a LANC socket.
- Insert a recorded cassette tape with an intact erasure prevention tab.
- Select the video source required by pressing **INPUT SELECT** to set A1, A2 or A3.
  A1: Through the AV1 socket.
  A2: Through the AV2 socket.
  A3: Through the AV3 (AUDIO IN/VIDEO IN/S-VIDEO IN) sockets on front panel.
- Upon completion of the One-Touch Editing, disconnect the edit cable.

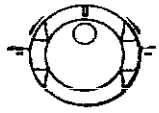
Recording VCR



Operations

1 Press **PAUSE/STILL** on the recording VCR.

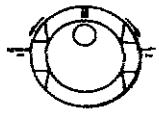
2 Search for the end of the previous recording.



3 Press **REC** to switch the VCR from the pause mode to the recording standby mode.

- The playback VCR will be in still mode.
- If **INSERT** or **AUDIO DUB** is pressed instead of **REC**, Insert Editing or Audio Dubbing can be performed.

4 Search for the Edit in (starting) point on the playback VCR.



5 Start One-Touch-Editing by pressing **PAUSE/STILL** again.

6 Press **PAUSE/STILL** at the Edit out (ending) point on the playback VCR.

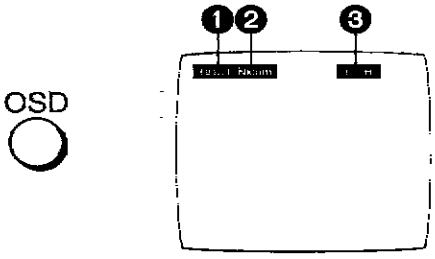
- For Editing in succession, repeat **4** to **6**.

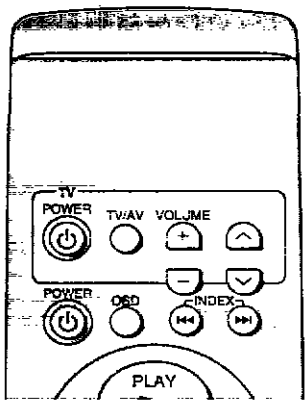
7 Press **STOP** to stop editing.

Other Functions

On Screen Display

Press **OSD** to make the On Screen Display appear on the TV screen.





1 TV station

2 Nicam or Mono Indicator
When receiving a TV programme, the type of sound system in which it is broadcast is automatically indicated.
- If **NICAM OFF** is selected during manual tuning procedure, Mono indicator is always displayed. (See page 34.)

3 Audio Output Mode Indicators
The Left (L) and Right (R) Indicators show which sound mode is selected with **AUDIO OUT**.
Stereo: Both the L and R Indicators appear.
Left: The L Indicator appears.
Right: The R Indicator appears.
Normal: Both the L and R Indicators don't appear.

Note:
When the item **"On screen display"** is set to OFF, the On Screen Display will not appear except for error message. (See page 37.)

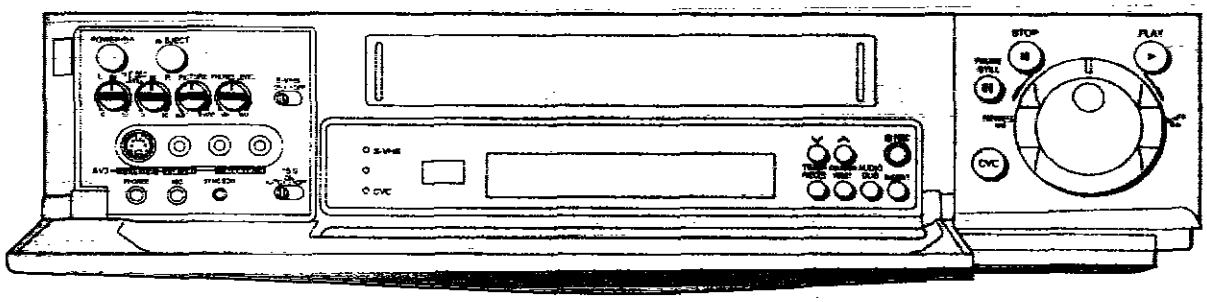
VHS Index Search System

It is very easy to find the beginning of each recording, because a special index signal is recorded at the start of each recorded segment on the tape.

Recording Index Signals
Index signals are recorded in following cases.
- When a recording is started by pressing **REC**.
- When **REC** is pressed during recording.
- When timer recording is activated.

For example:
Searching for the 2nd recorded segment in the forward direction.
Press **INDEX ⏭** twice during playback or stop mode.

- After finding the specific recorded segment, playback starts automatically.
- For the reverse direction, press **INDEX ⏮**.
- Up to 20 programmes can be searched for in both directions.
- When the opposite **INDEX** button is pressed, the number shall be decreased till 1.
- The figure on the display is decremented by 1 each time an index signal is located. Bear in mind that the display will be decremented in this way even while either **INDEX** button is being pressed.
- The INDEX search function can only work correctly, if the index signals are spaced at least 3 minutes apart in the SP mode and 5 minutes apart in the LP mode.



NTSC Playback

Tapes recorded in the NTSC system can be played back with this VCR via a PAL system TV set.

- The playback picture may roll up or down. If the TV set is equipped with a V-HOLD control, it may be possible to stop the picture movement by adjusting this control.
- Depending on the TV set used, the picture may be in black and white. However, this is not an indication of a malfunction.

Other Automatic Functions

Automatic Playback

When a cassette without an erasure prevention tab is inserted, the VCR starts playback automatically.

VTR-off Playback

When the VCR is off, an inserted cassette can be played back by pressing **PLAY**.

Automatic Rewinding

When the tape reaches its end during recording (except for timer recording) or playback, it will automatically be rewound to the beginning.

Automatic Switching Off and Ejection

When the VCR is switched off, and inserted cassette can be ejected simply by pressing **EJECT**. The VCR will eject the cassette and automatically turn itself off again.

Various Settings

Storing TV Broadcasts into your VCR

The VCR is fitted with its own TV tuner (just like a normal TV set) and can be pre-set to receive up to 99 TV broadcast stations.

Settings Using On Screen Display

Setting the Clock of your VCR

The built-in clock is used to activate the timer for automatic recording and must be set to the correct time.

Setting the Remote Controller for Operation of your TV

You can operate some makes of TVs using the supplied Remote Controller after this setting up.

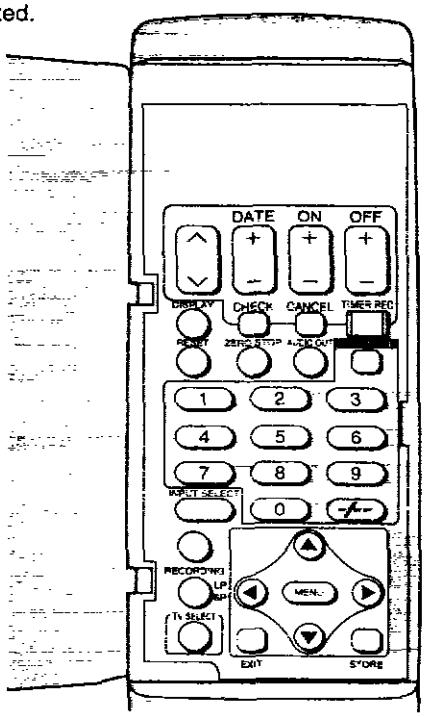
Storing TV Broadcasts into your VCR

Introduction

The VCR is fitted with its own tuner (just like a normal TV set) and can be pre-set to receive up to 99 TV broadcast stations.
When your VCR is plugged in for the first time, the Auto Setup feature will tune in your channels automatically. However, under certain circumstances in some transmission areas certain channels may not be assigned a channel name or their normal channel position. If this is the case they will need to be tuned manually. If Auto Setup is not successful, please follow the steps below.

Preparation

Confirm that the TV is on and the VCR viewing channel is selected.



Manual Tuning Procedure

Follow the operation guide on screen display.

Operations

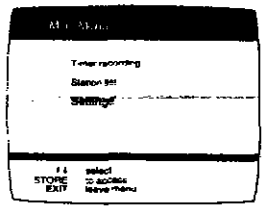
1 Press **MENU**.

MENU

2 Select **Settings**.

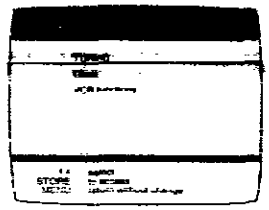
STORE

On Screen Display



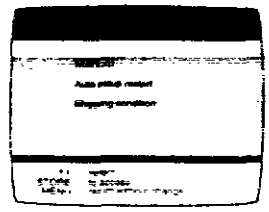
3 Select **Tuning**.

STORE



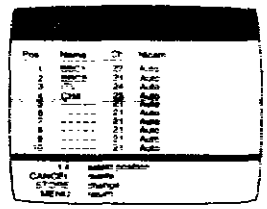
4 Select **Manual**.

STORE



5 Select desired programme position.

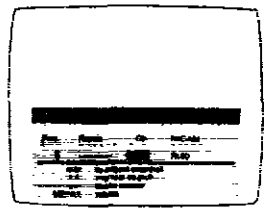
STORE



6 Select the Signal Transmission Channel **(Ch)** if known.

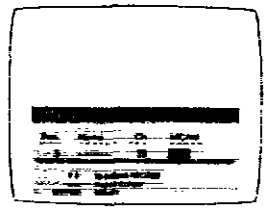
0 – 9

Use the numeric button.
Example; 33



- Use ▲ ▼ to search for the station if channel number is not known.

7 Select **NICAM Auto**.



- Select **NICAM OFF** to record the normal sound during a NICAM broadcast or if the stereo sound is distorted due to inferior reception conditions.

8 Press **MENU**, and then press **EXIT**.

MENU → EXIT

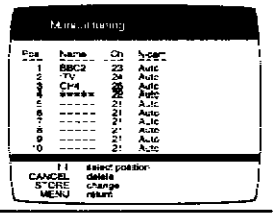
- Repeat steps **5** to **8** before pressing **EXIT** if manual tuning for other station is required.

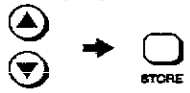
Entering the Station Name

Follow the steps **1** to **4** on page 34.

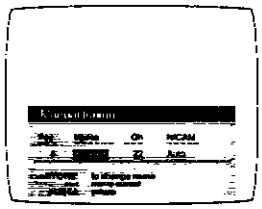
5 Select the station(s) named ✳✳✳✳✳ for which you wish to setup name.
Establish which channel you are viewing, by checking your TV Guide/ Newspaper.

On Screen Display

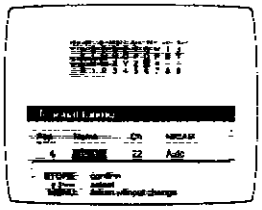


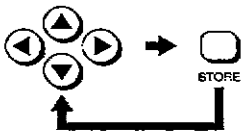


6 Highlight the TV station name.

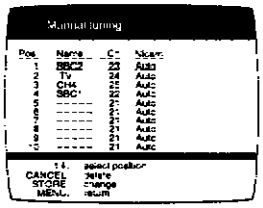


7 Enter characters into **all** five ✳✳✳✳✳ positions, from the table using the arrows and press **STORE** after each character. Use blank space if required, to enter a blank select the area between **Z** and ✳.





8 Press **MENU** once.
If you wish to change or setup, any other TV station names repeat steps **5→8**.

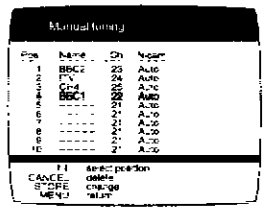


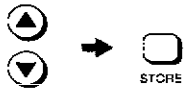
9 Press **EXIT**.

Changing the Programme Position

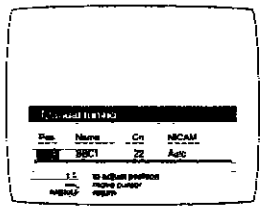
Follow the steps **1** to **4** on page 34, then follow the example below.

5 Select the station(s) named "BBC1".





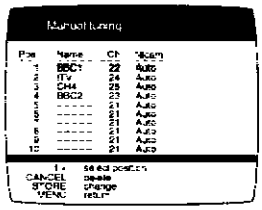
6 Select the number location you want to set the channel.



0 – 9

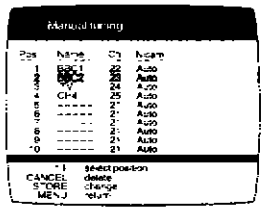
Use the numeric buttons.
Example; 1

7 Press **MENU** once.



8 To amend other programme positions repeat steps **5→7**.

9 When correctly tuned your station list will look like this. (Channe information will vary.)



- This is needed for using Video Plus+ PlusCodes correctly.

10 Press **EXIT**.

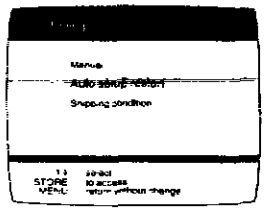
Note:
When channels have been set with manual tuning, the channel position will need to be entered in the highlighted box the first time Video Plus+ is used.

Auto Setup Restart

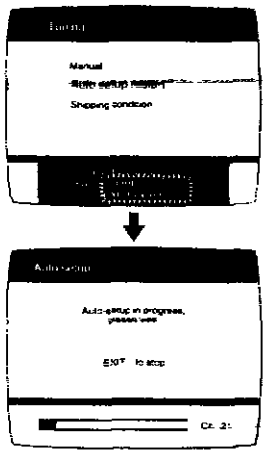
If the VCR is moved to a different TV transmission area, you may have to retune your VCR.
Follow the procedure below.
Follow the steps **1** to **3** on page 34.

4 Select **Auto setup restart**.

On Screen Display



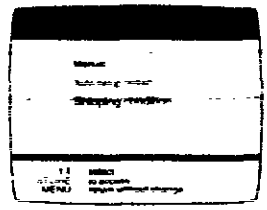
5 Press **STORE**.



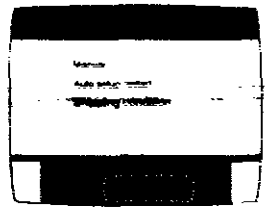
Shipping Condition

If you want to return the VCR to the factory-preset condition, follow the procedure bellow.
Follow the steps **1** to **3** on page 34.

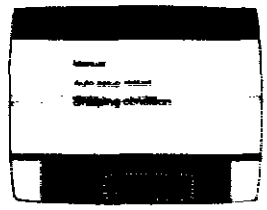
4 Select **Shipping condition**.



5 Press **STORE**.



6 Press **STORE** again.

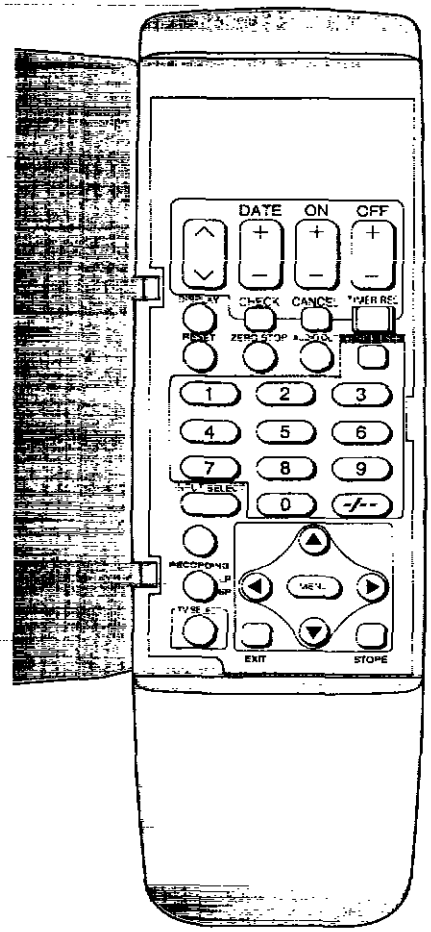


Note:
To re-tune VCR, disconnect mains lead and then reconnect mains lead. If VCR is off, turn on the VCR. Auto setup will start automatically.

Settings Using On Screen Display

Preparations

- Confirm that the TV is on and the VCR viewing channel is selected.
- Turn on the VCR.

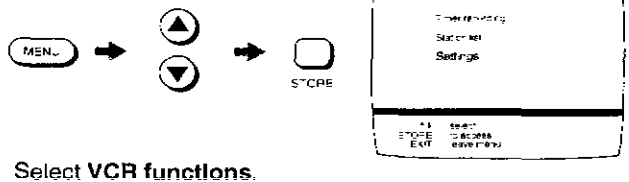


VCR functions

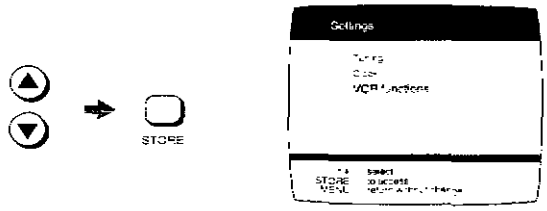
On Screen Display

1 Press **MENU**, and then select **Settings**.

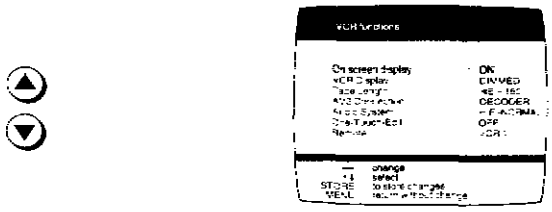
On Screen Display



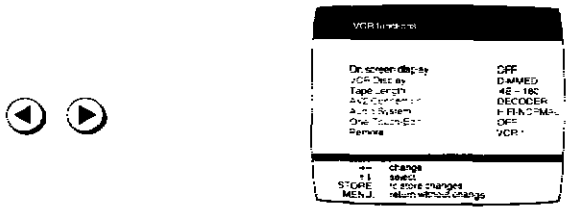
2 Select **VCR functions**.



3 Select **On screen display**.



4 Select **ON** or **OFF**.

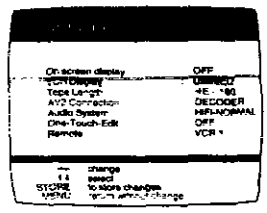


ON: The On Screen Display will appear on the TV screen by pressing **OSD**.
OFF: The On Screen Display will not appear even if **OSD** is pressed.

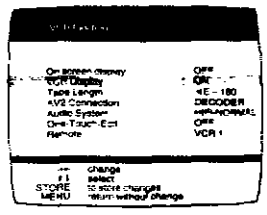
VCR Display

1 Select **VCR Display**.

On Screen Display



2 Select **ON**, **OFF** or **DIMMED**.



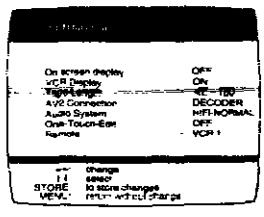
ON: When VCR is turned off, the characters are lit in the VCR display.

OFF: When VCR is turned off, the characters are not lit in the VCR display.

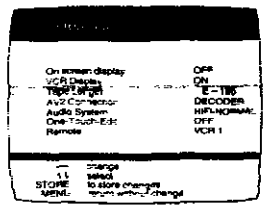
DIMMED: When VCR is turned off, the characters are dimmed in the VCR display.

To select the Corresponding Cassette Tape Length for Displaying the Approximate Remaining Tape Time

1 Select **Tape Length**.



2 Select the corresponding cassette tape length.

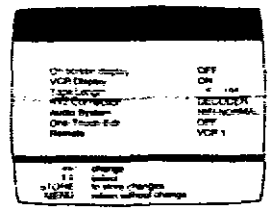


◀ E-180: For E30, -60, -90, -120 and -180 tapes.
E-195: For E195 tape.
E-240: For E240 tape.
E-260 ▶: For E260 and -300 tapes.

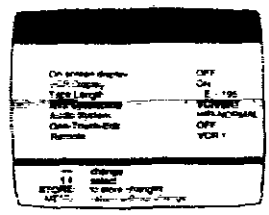
- The times displayed may differ depending on the tape used.

AV2 Connection

1 Select **AV2 Connection**.



2 Select **VCR/SAT** or **DECODER**.

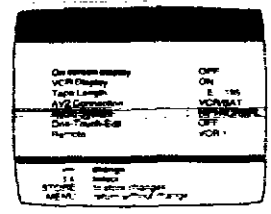


VCR/SAT: When another VCR or the satellite receiver is connected to the AV2 socket.

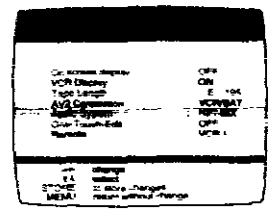
DECODER: When the decoder is connected to the AV2 socket.

Audio System

1 Select **Audio system**.



2 Select **HIFI-NORMAL** or **HIFI-MIX**.



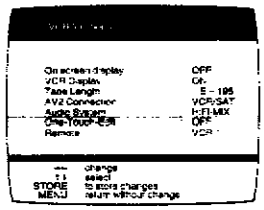
HIFI-NORMAL: Normally set at this position to reproduce the better sound available from the Hi-Fi track.

HIFI-MIX: Both sound tracks (the Hi-Fi sound track and the normal sound track) are played back mixed together. Use this setting when playing back a cassette tape which has been insert edited or audio dubbed.

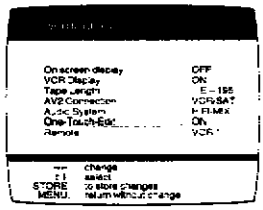
One-Touch-Edit

1 Select **One-Touch-Edit**.

On Screen Display



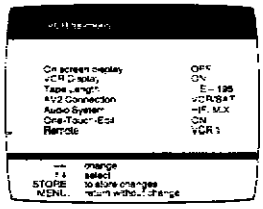
2 Select **ON** or **OFF**.



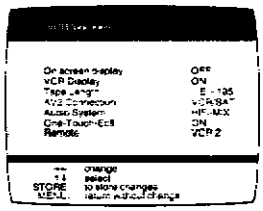
ON: For One-Touch-Editing.
OFF: For editing with editing controller or synchronized editing.

Remote Control Mode

1 Select **Remote**.



2 Select **VCR1** or **VCR2**.



VCR1: Set to this position on both the VCR and remote controller for normal use with one VCR.
VCR2: Set to this position when using two Panasonic VCRs.
This allows to operate VCR1 or VCR2 with remote controller.

- After changing the remote control mode, press ▲ or ▼ while holding **TV SELECT** to change the remote control mode of the remote controller. If this is not done, it will not be possible to operate the VCR using the remote controller. (See page 7.)

After All Settings are selected

Press **STORE**, and then press **EXIT** to make On Screen Display disappear.

Setting the Clock of your VCR

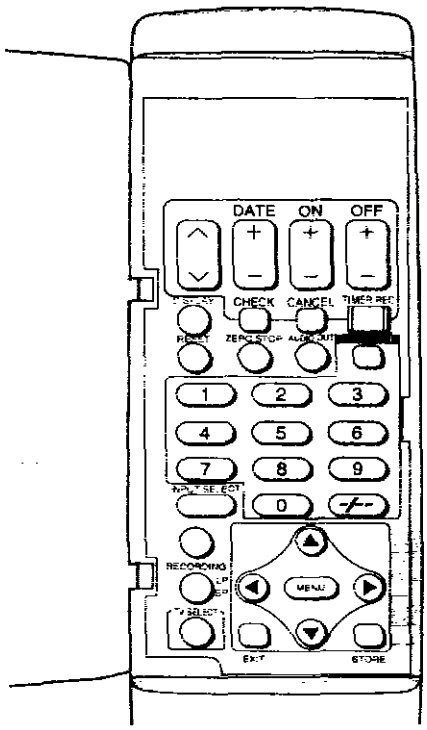
The built-in clock is used to activate the timer for automatic recording and must be set to the correct time.

The built-in digital clock employs the 24-hour system.

If VCR is not correctly set by Auto setup, follow the procedure below.

Preparations

- Confirm that the TV is on and the VCR viewing channel is selected.
- Turn on the VCR.



Manual Clock Setting

Follow the operation guide on screen display.

Operations

1 Press **MENU**, and then select **Settings**.

2 Select **Clock**.

3 Select **Manual setting**.

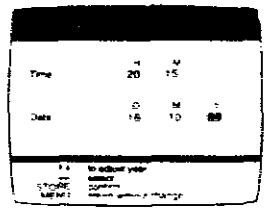
4 Set **Time (H/M)**.
- When it is kept pressed, the indication changes in 30-minute steps.

5 Set **Date (D)**.

6 Set **Month (M)**.

7 Set **Year (Y)**.

On Screen Display



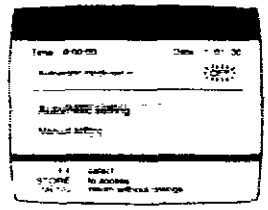
8 Press **STORE**.
- The clock will start.

9 Press **EXIT**.

Automatic Clock Setting

Follow steps **1** to **2** of the above procedure.

3 Select **Automatic setting**.

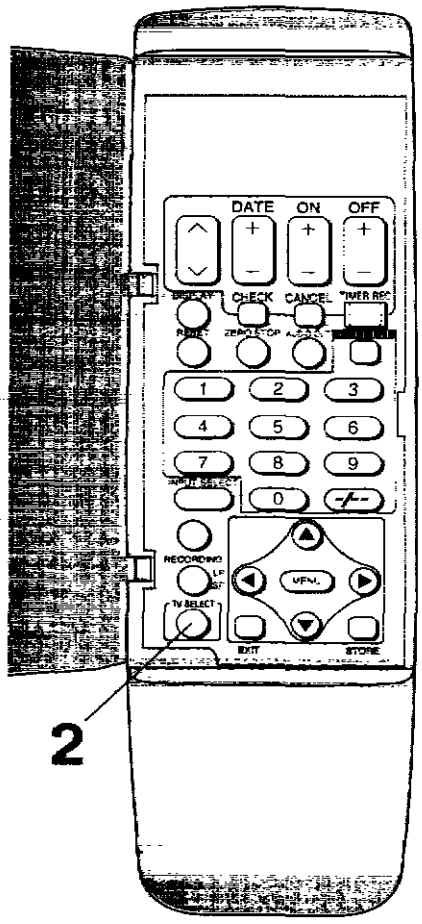


4 Press **STORE**.
- The clock is set automatically.

Notes:
- The clock operates for at least 60 minutes by its backup system in the event of power failure.
- When the item **"Automatic clock-set is"** is ON on the on screen display, Automatic time correcting function is activated.
  The Automatic time correcting function will only work when the VCR is in standby. This function will not work during timer recording standby mode.

Setting the Remote Controller for Operation of your TV

You can operate some TV manufacturers (see next page) using the supplied Remote Controller after this setting up.



Preparation

Install the batteries in the remote controller. See page 7.

Operations

1 Turn on the TV.

2 Press corresponding operation button to your TV manufacturer (see next page) while keeping **TV SELECT** pressed.

- If setting is correct, TV will be turned off automatically.

Note:

Some TV models cannot be operated using this remote controller.

TV Manufacturer	Operation Button
Panasonic	TV SELECT + ∧
	TV SELECT + ∨
	TV SELECT + DATE +
	TV SELECT + DATE −
GRUNDIG, Blaupunkt, SIEMENS	TV SELECT + ON +
PHILIPS, LOEWE, SAMSUNG, RADIOLA, DUAL, PYE, BUSH, GOODMANS, ELEMIS, CURTIS, SBR	TV SELECT + ON −
SONY	TV SELECT + OFF +
METZ	TV SELECT + OFF −
FERGUSON, THOMSON, TELEFUNKEN, GOODMANS, SABA	TV SELECT + DISPLAY *
FERGUSON, THOMSON, TELEFUNKEN, GOODMANS	TV SELECT + CHECK -
FERGUSON, THOMSON, TELEFUNKEN, GOODMANS, SABA	TV SELECT + CANCEL *
FERGUSON, TELEFUNKEN, GOODMANS, SABA	TV SELECT + TIMER REC *
TELEFUNKEN	TV SELECT + RESET -
FERGUSON, THOMSON, TELEFUNKEN, GOODMANS, SABA	TV SELECT + ZERO STOP*
FERGUSON, THOMSON, TELEFUNKEN, GOODMANS, SABA, NORDMENDE, BRANDT	TV SELECT + [illegible] *
HITACHI	TV SELECT + 1
	TV SELECT + 2
SIEMENS	TV SELECT + 3
SAMSUNG	TV SELECT + 4

TV Manufacturer	Operation Button
ITT, NOKIA, SELECO	TV SELECT + 5
NOKIA, SALORA	TV SELECT + 6
MIVAR	TV SELECT + 7
TOSHIBA	TV SELECT + 8
SANYO	TV SELECT + 9
JVC	TV SELECT + 0
SHARP	TV SELECT + INPUT SELECT
MITSUBISHI	TV SELECT + ◀
TELEFUNKEN	TV SELECT + EXIT *

When the TV manufacturer is Panasonic or HITACHI:
When the TV's power is turned off in step **2** on the previous page, turn it back on and adjust the TV's volume using this remote controller. The volume can be adjusted if the operation button matches the TV manufacturer.
If it is not possible to adjust the TV's volume, try pressing the other operation button to match the TV manufacturer *again until the volume can be adjusted.*

***When the TV manufacturer is FERGUSON, THOMSON, TELEFUNKEN, GOODMANS, SABA, NORDMENDE or BRANDT:**
How to change the programme position of TV:

1 Press ∧ **(TV)** to make **POS** appear on screen display.

2 Press **VOLUME** + or −.
- To adjust the TV's volume using the remote controller after that, press ∧ **(TV)** to make **POS** on screen display disappear and then adjust the volume. For some models, **POS** disappears automatically after several seconds. In these cases, this operation is not necessary.

Note:
SIEMENS, SAMSUNG, NOKIA, FERGUSON, THOMSON, TELEFUNKEN, GOODMANS and SABA have plural operation buttons. Although some models may operate with any of these operation buttons, other models may operate with only one operation button. Check each operation button in turn, and set the optimal operation button.

Helpful Hints

Before Requesting Service

Before requesting service, check the following points once again.

Precautions

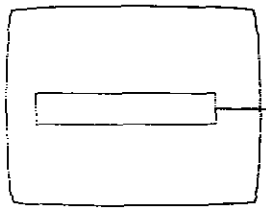
Please read these cautions before you operate this VCR.

Specifications

Before Requesting Service

Before requesting service, check the following points once again.

Message of On Screen Display



Message of On Screen Display is displayed.

MESSAGE	CAUSE	REMEDY
This action is not possible before time and date is set	**VIDEO PLUS+** is pressed when date and time are not set.	Set date and time.
Please insert Video tape	**REC, PLAY, FF, REW, INSERT** or **AUDIO DUB** is pressed when no cassette in the VCR.	Insert a video cassette.
Please use unprotected tape	**REC, INSERT** or **AUDIO DUB** is pressed without tab of Cassette.	Use a cassette with tab.

Self Test Indication

This VCR has a self-diagnosis and display function. If the VCR detects trouble during installation or during use, the following indications automatically appear in the VCR display. Indications are displayed in the form of a single English letter plus two numbers such as [H01].

INDICATION	CAUSE	REMEDY
H □ □	Some trouble has occurred. (Numbers following H and F differ according to the status of the VCR.)	Consult your dealer for further advice.
F □ □		

VCR will not operate correctly

SYMPTOM	CAUSE	REMEDY	CHECKED
VCR display is not illuminated.	Mains lead is not connected.	Reconnect mains lead to VCR.	
	VCR Display setting is OFF.	Set **VCR Display** to ON or DIMMED. See page 38.	
VCR display is illuminated but VCR will not operate.	VCR is in timer mode.	Press **TIMER REC** to operate VCR manually.	
	Safety devices are operating.	Disconnect mains lead and wait for 1 minute. Reconnect mains supply and check functions.	
	Condensation may have formed.	Do not operate VCR for 1 hour.	
VTR fails to operate properly.	Edit cable is still connected.	Try disconnecting the edit cable except with One-Touch Editing.	

Playback will not operate correctly

SYMPTOM	CAUSE	REMEDY	CHECKED
Picture noisy or not in colour. Horizontal bars or lines run down the screen.	Tracking is not correct.	Adjust the tracking. See page 19.	
	TV set is not tuned to VCR.	Operate **RF OFF/TEST SIGNAL** on VCR and check TV tuning. See page 15.	
	Video heads are clogged or worn.	Consult your dealer for further advice. Head cleaning by service agent is not covered by warranty.	

Recording will not operate correctly

SYMPTOM	CAUSE	REMEDY	CHECKED
"[redacted]" indication flashes whenever recording is attempted.	Erasure prevention tab on cassette is broken off.	Use tape with intact erasure prevention tab, or cover tab hole with adhesive tape, if original recording is no longer required.	
Picture is recorded with noise or blank screen.	Aerial or aerial lead is defective.	Check aerial connection to VCR. See page 12. Check your normal TV picture. If there is no picture, check your aerial.	
	VCR is not correctly tuned.	Re-tune VCR. See pages 34–36.	
	A1, A2 or A3 is selected.	Select the required TV programme.	
Timer recording cannot be performed.	Clock or calendar is incorrectly set.	Check clock and calendar. Set to present time. (Note this is a 24 hour clock.) See page 40.	
	Recording start or end time setting is incorrect.	Set recording start and end time correctly.	
	VCR is not set for timer recording.	Press **TIMER REC** after programming for timer recording.	
AV external recordings cannot be made.	A1, A2 or A3 is not selected.	Select A1, A2 or A3 by pressing **INPUT SELECT**.	
	External AV connections are incorrect.	Check that connections for external video and audio source are correct. See page 27.	

Remote controller will not work correctly

SYMPTOM	CAUSE	REMEDY	CHECKED
Remote controller does not operate correctly.	Remote controller transmitter beam is not reaching VCR.	Ensure that remote controller is being pointed at VCR and that transmitter beam is not obstructed.	
	Distance is too far.	Use remote controller within 7 m of VCR. If this range is not possible, replace batteries.	
	Batteries are exhausted.	Replace batteries. Note precaution for replacement on page 7.	
	Batteries are incorrectly fitted with (+/−) reversed.	Fit batteries correctly as shown on page 7.	
	Wrong remote control mode has been selected.	Set to the correct remote control mode. See page 7.	

Precautions

Please read these cautions before you operate this VCR.

Avoid Sudden Changes in Temperature

If the VCR is suddenly moved from a cold place to a warm place, condensation may form on the tape and inside the VCR.

Humidity and Dust

Avoid places where there is high humidity or much dust, which may cause damage to internal parts.

Do Not Obstruct the Ventilation Holes

The ventilation holes prevent abnormal increases in temperature. Do not block or cover these holes. Especially avoid covering the holes with soft materials such as cloth or paper.

Keep away from High Temperature

Keep the VCR away from extreme direct heat such as direct sunlight, heating radiators, or closed automobiles.

Keep Magnets away

Never bring a magnet or magnetized object near the VCR because it will adversely affect the performance of the VCR.

No Fingers or Other Objects Inside

Touching internal parts of this VCR is dangerous, and may cause serious damage to the VCR. Do not attempt to disassemble the VCR. There are no user serviceable parts inside.

Keep Water away

Keep the VCR away from flower vases, tubs, sinks, etc. CAUTION: If liquids are spilled into the VCR, serious damage could occur. If you spill any liquid into the VCR, consult qualified service personnel.

Cleaning the VCR

Wipe the VCR with a clean, dry cloth. Never use cleaning fluid, or other chemicals. Do not use compressed air to remove dust.

Stacking

Place the VCR in a horizontal position, and do not place anything heavy on it.

Video Head Clogging

The video heads place picture signals on the tape during recording and read picture signals from the tape during playback and they are, therefore, of critical importance for the picture quality. To ensure that they can always provide optimum picture quality, this VCR is equipped with an Auto Head Cleaning Function that removes tape particles and dust from the video heads. However, if the VCR is used over extremely long periods of time, these heads may become dirty and clogged. In such a case, the signals can no longer be recorded correctly, and the playback picture will be distorted accordingly. This is the case, for example, during the playback of a tape, the sound is reproduced normally, but no picture is seen, or the picture is greatly distorted. When such a symptom case occurs have the recorder checked by qualified service personnel.

Head cleaning by service agent is not covered by warranty.

Condensation may form in the VCR if:

- The VCR is in a room where the heater has just been turned on.
- The VCR is in a room with steam or high humidity.
- The VCR is brought from cold surroundings into a well-heated room.
- The VCR is suddenly brought from cool surroundings, such as an air-conditioned room or car, to a place which is hot and humid.

Note:
Do not operate the VCR for at least 1 hour if any of the above conditions occur.
This VCR does not incorporate a dew sensor.

Tape Care

Some do's and don'ts on tape care.

DO:

1) Use a good quality branded tape, such as Panasonic.
2) Keep in the Box supplied with your tape, or a video case, when not in use.
3) Try to use all the tape on a cassette by making recordings not only at the tape start but also in the middle and end sections. This will avoid many repeated recordings at the beginning of the tape resulting in premature wear.
4) Take care to insert a tape correctly into the VCR to avoid damage.

DO NOT:

1) Expose the tape to high humidity or temperature.
2) Expose to liquid.
3) Expose to dust particles by storing directly on a carpet for example.
4) Use a damaged tape or attempt to repair.
5) Dismantle the cassette housing.
6) Attempt to lift the front cassette flap or touch the tape surface.

Specifications

NV-HS900B...(U.K. model)

Power Source:	220–240 V AC 50–60 Hz
Power Consumption:	27 watts

Video Recording System:	2 rotary heads, helical scanning system		
Video Heads:	4 heads		
Tape Speed:	SP; 23.39 mm/sec. LP; 11.7 mm/sec.		
Tape Format:	VHS/S-VHS tape		
Record/Playback Time:	SP; 240 min. with NV-E240 LP; 480 min. with NV-E240	SP; 260 min. with NV-SE260 LP; 520 min. with NV-SE260	
VIDEO			
Television System:	CCIR; 625 lines, 50 fields, PAL colour signal		
Modulation System:	Luminance; FM azimuth recording Colour signal; converted subcarrier phase shift recording		
Input Level:	AV1/AV2;	1.0 Vp-p,	75 ohm, terminated
	VIDEO IN (AV3) (PHONO);	1.0 Vp-p,	75 ohm, terminated
	S-VIDEO IN (AV3);	1.0 Vp-p,	75 ohm, terminated
Output Level:	AV1/AV2;	1.0 Vp-p,	75 ohm, terminated
	VIDEO OUT (PHONO);	1.0 Vp-p,	75 ohm, terminated
	S-VIDEO OUT;	1.0 Vp-p,	75 ohm, terminated
	RF Modulated;	UHF channel 36 (±6),	75 ohm
AUDIO			
Input Level:	AV1/AV2;	−6 dBV,	more than 10 kohm
	AUDIO IN (AV3) (PHONO);	−10 dBV,	more than 47 kohm
	MIC (M3);	−70 dBV	
Output Level:	AV1/AV2;	−6 dBV,	less than 1 kohm
	AUDIO OUT (PHONO);	−8 dBV,	less than 1 kohm
	HEADPHONES;	−30 dBV,	8 ohm
Audio Track:	1 track (Normal-mono only), 2 channels (Hi-Fi sound-stereo)		
Video Horizontal Resolution:	Colour; more than 240 lines (VHS/SP) more than 400 lines (S-VHS/S-Video Socket)		
Dynamic Range:	Audio; more than 90 dB (Hi-Fi audio track)		
Audio Frequency Response:	20 Hz–20 kHz		
Wow and Flutter:	0.005% Wrms/Hi-Fi		
Operating Temperature:	5°C–40°C		
Operating Humidity:	35%–80%		
Weight:	5.1 kg		
Dimensions:	430 (W)×107 (H)×329.5 (D) mm		
Standard Accessories:	1 pc. RF Coaxial Cable 1 pc. Remote Controller 2 pcs. "R6" size batteries 1 pc. AC Mains Lead 1 pc. Audio Cable 1 pc. Edit Cable 1 pc. S-Video Cable		

Weight and dimensions shown are approximate.
Specifications are subject to change without notice.

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